

# Aviation News

McGRAW-HILL PUBLISHING COMPANY, INC.

OCTOBER 23, 1944



**Hawker Tempest—Buzz Bomb Buster:** More than 600 flying bombs were knocked down by this successor to the Hurricane and Typhoon, just off the RAF secret list. It is now being used from Belgian bases against the Nazi jet Messerschmitt 262. It is powered with a supercharged Napier Sabre 2,200 hp. engine and has a de Havilland variable pitch four-blade prop.

## **CAB Speeds Hearing on North Atlantic Route Case**

Moves quickly to assume leading role in world air commerce as military situation promises early reopening of Continental trade.....Page 38

## **Industry Cold to Plan to Offer Revised CAR at Parley**

Time is too short, manufacturers and airlines feel, for proper study and discussion of proposed new regulations before Nov. 1.....Page 42

## **U. S. to Seek Provisional Agreement on Landing Rights**

Reciprocal accords believed America's early objective in air parley with view to opening service on CAB's proposed 140,000 miles of routes..Page 7

## **Study FCC Radio Hearings for Effect on Flight Control**

Company specialists see move to solve radio frequency spectrum problems as of vital importance in future development of aviation.....Page 43

## **Speed Near that of Sound Presents Design Problems**

Revamped equipment and new conception of aerodynamics developing as result of war-stimulated advances.....Page 31

## **Over 100 Military Plane Types Eligible for Civil Okay**

Out of six warplanes tested by CAA at its Vandalia, Ohio, base, only one, the Boeing C-73, is found acceptable without modification....Page 13

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## THE AVIATION NEWS

### Washington Observer

**PROTESTS RELAXATION**—At least one light plane manufacturer is protesting to CAA that recommendations by Army Chamber Personnel Aircraft Council spokesmen favoring extensive relaxation of aircraft type certification requirements, were made without his knowledge or consent. This manufacturer, who feels that some others agree with him, says that removal of stringent regulations would be followed by dangerous short cuts in stresses and tolerances. This would have two bad effects, in his opinion: (1) shoddy designs would gain advantage over those who maintained high standards, and (2) accidents due to shoddy designs would damage the entire industry. He adds the Council does not represent the entire industry and that it must make exceptions in its commitments. Council's position is that manufacturers' desire for success and profit is the best possible motivation for safe and durable airplanes, and that the industry should work toward freedom, equal to that of the automobile industry.

**MORE TRANSPORT PLANES**—It may be some time off, but the Army is known to be cognizant of the needs for additional planes for both domestic and foreign airlines. The change in procedure for allocation, with requirements being measured by a group in Surface Property Board, including representatives of more agencies than have hitherto been involved, may be helpful to the airlines even before the end of the European war. State Department and FEA will be potent factors in arguing for planes to be allocated airlines in South America and other key countries. But ships can hardly be given overseas operators unless domestic needs are measured against them—and as that basic American line can put up a good case.

**V-E DAY CUTBACKS**—There is little doubt now but that the total cutback on V-E Day will total more than the 60 percent which has been discussed. WFB officials admit privately

that it will be nearer 75 percent, but little will be said publicly because of the fear of the armed forces that industry will become halfhearted and difficult to control as V-E Day approaches.

**PRE-DETERMINATION**—Aircraft manufacturers facing cutbacks are coming more and more in contact with the word "pre-determination" in their dealings with the Army Readjustment Branch. Simply defined, pre-determination means an agreement reached by the company and the Government, before work on the contract is stopped. Many details can be worked out ahead of cancellation and the War Department is anxious to do as much as it can. Presumably it is Brig. Gen. D. N. Haxman, head of the Army's termination work.

**NO SALE ON GLIDERS**—Although no information on sales of surplus gliders is available from Defense Plant Corp., an analysis of bid invitation B-10 shows that, of the first eight offered in the Atlanta CMA region, none was sold. They have been re-offered in a later bid invitation. The ones offered were Pipers, and the company says it is impossible to convert them to planes. However, they would supply spares, and are offered without ceiling prices being set.

**MARINE CARRIERS**—Marine Corps air squadrons probably will be in action ahead of two carriers assigned there shortly after the first of the year. Carriers logically would be of the Sangamon class, converted from fleet orders. The four announced ships in this class have longer flight decks than other CVE classes and are well compartmented to take punishment in the kind of aboard screening of landing forces for which Marine squadrons are trained. It would be a good bet that squadrons will consist of new P-4-U's with better deck landing

Auxiliary Belly Tanks brought out by carrier handlers during opening of the Battle of the Eastern Philippines



## to New Industry in the West

Add to these the uses the cheap hydro-electric power of such dams as Grand Coulee, Boulder and Shasta, the plentiful supply of labor due to the natural attractiveness of the West as a place to live and work . . . and you have the primary ingredients for the new industries which will be added to the West's agriculture, herding, oil and fishing.

The new industrial development of the broad West demands fast transportation...which means air transportation. Western Air Lines, owned and operated by Westerners since its inception in 1926, is alert to its responsibilities as the "West's own airline," to provide the finest service as fast as our conditions permit.

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**NOT A NEW ROLE**—Marine squadrons served on carriers before the war, but since Pearl Harbor have been used in land-based operations entirely. Marine air has worked out methods of close teamwork with ground units, concentrating on direct support of ground troops. Now, however, Marine pilots are trained in ground tactics, from landings to jungle air-fighting, both to give them knowledge of what ground troops need in way of support and to instill in pilots the idea that they are part of one team.—The Marines. It says so.

**LIGHT PROPELLERS**—Small automatic and controllable pitch propellers will be down to a point in weight and price where engineers will have to decide, almost immediately, whether to put them on their post-war personal planes. Army and Navy experiments with the new, lightweight, controllable blades, Bartlett Hayward, Anniston, and Beech have pushed light controllable and automatic pitch development years ahead of where it might otherwise have been. In addition to the three in military programs, several others are on test with light plane manufacturers. SIF others have design and manufacturing plans.

Industry  
Observer

**Industry Observer**

General organization of the Air Transport Association's Air Traffic Conference is being studied, one proposal being to provide for membership of foreign airlines in an International Air Traffic Conference.

■ **FAA grants certificates to new airlines, including Sweden, the Air Transport Association is expected to take them in as members.** All American Aviation is at present the only ATA member not carrying passengers. Eastern, Inc., granted a certificate but not yet operating, still is outside ATA.

Bendix Aviation Corp.'s interest in lightplanes has reached the point of negotiations with at least one established manufacturer. Discussions with Aerotec, however, failed to materialize as purchase of the company.

► Unconfirmed reports in Detroit say Heaton Fleet, former head of Consolidated Aircraft Corp., has turned down offers to become Boeing head.

► Omar L. Woodson, who resigned recently as Bell Aircraft vice president and Georgia Division man-

Washington Observer

study just completed by the Coordinator of Inter-American Affairs shows that makers of capital goods will find a market close to \$5,000,000 worth of new and used products in the first ten years after the war, and that Brazil, Mexico and Argentina will be among the best customers. The figure includes about \$1,000,000 of used equipment, of which 40 percent could come from U. S. surpluses. Aircraft equipment is on the list along with machine tools and productive machinery of all kinds.

**HIGHWAY SLIGHT STRIPS**—Appropriations that expenditures of large sums for a state-federal highway flight strip program will interfere seriously with the proposed CAA airport program is being felt and voiced by some programs. The FAA's flight strips program has been construed that the flight strips would be located "wherever there is an available site piece of land alongside a highway" without regard to serving a particular community, which is the primary consideration in the airport siting process. The FAA also states that public funds made available for both the flight strip program and the airport program is an important question. The airport advocates also question the "safety" feature of patting the flightstrip alongside highways, pointing out that such a location explains one of many reasons why the highway safety program is so critical.

ager, has not joined Hughes Tool Co., despite the announcement made to that effect.

■ Morgan's child's syndicated column last week made first public mention of Lockwood's proposed small transport, the Saturn, answer to Douglas' Skybus. Childs also referred to the super transport, the double-decked Concentration, and Lockwood's Skyliner.

► An entire crop of new German plane types is dying, according to visitors returning from Europe. One is described as a four-engined bomber somewhere between the sizes of the Fortress and Superfortress. Several new jet or turbine types with fantastic speeds have been seen.

Food is scheduled to switch to single-tailed Liberator soon, while the Casuar West Coast Lake will retain the double fin. The Navy's version probably will become known as the Sea Liberator.

▶ All-jet propelled airliners will be in commercial use within 10 years, a chief engineer of a major aircraft manufacturer said today.

• The first C-55 Combiellation will start extensive test flights soon throughout the U S in the service of the Air Transport Command, but it probably will not be put into any over-ocean or foreign work at the near future.

• Revisions in the Curtiss-Wright C-48, already made in at least one ship delivered by the company, include a heated, hard-proof windshield and changed nose and cockpit.

# A Triumph of Planning



So writes

**WALTER DORNWIN TEAGUE** noted industrial designer, in describing Bell Aircraft's advances in aircraft production for the war effort today...for all tomorrow.

I WITNESSED a triumph of planning when I walked through Bell Aircraft's Niagara Frontier Demonstration Plant. I have seen many impressive plans but seldom with perfect order and with high efficiency on so vast a scale.

It was easy to sense the pride of craftsmanship in the men and women who work there. It became vivid as the machine which demonstrated his tube-bending machine for me, and the known who showed the method he himself had invented for sealing aluminum hydraulic tubes to keep them leak-free.

"And then, from this demonstration of perfected techniques, we went to the laboratories, where scientific knowledge and inventive genius used skill, work with experimental methods to solve problems that have no precedent. Instead of the calm assurance of the big assembly plant, the atmosphere here is that of technical mastery words was one of barely suppressed excitement, hurry, joyous, exclamation, but above all, confidence.

"That was an event to be remembered, because I saw for the first time two of the most spectacular developments in aviation. I saw the Bell bel-



Sealing tube with the *Hotch-Mold Tube Seal*—a Bell Aircraft invention now widely used by the aircraft industry.

copper boiler and moving under perfect control within inching distance of the ground, and I had my first glimpse of a jet propulsion plane. The Bell crowd eagerly is as adept at design as it is skilled in manufacturing.

"There are many people I know whom I'd like to take through that

plant and these laboratories. They would have a better understanding of what modern industry has grown into now that it's really taking its stride, and what the future offers to aviation programs for our nation's prosperity."

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## NIAGARA FRONTIER DIVISION

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PACEMAKER OF AVIATION PROGRESS

★ Bell Aircraft Corporation

VOLUME 3 • NUMBER 12

# Aviation News

McGraw-Hill Publishing Co., Inc.

October 23, 1944

## U.S. To Seek Provisional Agreement On Landing Rights at Chicago Talks

Reciprocal access on most-favored-nation basis believed America's early objective in world air parity with view to opening service on CAA's proposed 140,000 miles of routes as soon as war conditions permit.

America will seek at the International Aviation Conference opening in Chicago on Nov. 1 to implement the main objective of post-war air policy—to obtain commercial landing rights for United States airlines in more than 80 countries so that world trade on the 140,000 miles of air routes recently proposed by the Civil Aeronautics Board can be utilized as rapidly as war conditions permit.

Rights would be granted on a national and most-favored-nation basis in a provisional agreement which U. S. delegates will urge the conference to adopt. It follows automatically that the same privileges will be available to foreign airlines at U. S. airports as are granted American carriers abroad.

• **Territorial Rights.** With the approval of Britain and China assured, and that of Russia expected, American officials are hopeful that right of transit and technical stop will be adopted by the conference with little difficulty, but whether the proposal for commercial rights will succeed is an open question.

Potentials of a dispute which could lead the conference to an impasse, and jeopardize America's hopes that commercial routes can be re-established and expanded immediately, were present in a British white paper published last week as an official proposal for conference consideration.

This white paper brought into the open on an official level for the first time the wide gap between Washington and London on two fundamental aspects of post-war air transport, a gap which Assistant Secretary of State Adolf Berle, Jr., and Lord Beaverbrook, then top British air official, were never able to close.

• **British Proposal.** The British Government proposed that air transport should be brought under rigid control through an international aeronautical body. These are the points at issue.

• **What shall be the jurisdiction of the international authority?**

• **Shall total world traffic be divided by intergovernmental agreement among the several airlines which will be participants?**

Britain would give the aeronautical body such broad powers that, in the words of an American official, CAA's present authority would be "derogated." Among other powers would be that to allocate frequencies and to assign portions of world traffic.

America, China and Russia will reject these portions of the white paper, it was reported on high authority last week. The view here is that aviation should be conducted on a business basis, not a political basis as seems inherent in the British proposal. American officials hold steadfastly to their original proposition that, once routes are established and landing rights granted, the frequency of operation is to be determined entirely by the demonstrated commercial need, and that an airline is entitled to that traffic which it can capture.

The British viewpoint was attributed to that country's secondary position in world aviation, and her apprehensions about American advancement.

• **U. S. Attitude.**—The American viewpoint is that any arbitrary division of world traffic would lead inevitably to power struggles, with a dangerous potential of war aviation, it is held, should be permitted to expand normally on a business basis. Americans point out that there is no precedent for placing as an instrument of transport.



MESSERSCHMITT'S 600 MPH. "SQUIRT":

Although no photos have been released of Germany's new reaction propelled single seat fighter—the stubby, teardrop Messerschmitt 163—an artist for *Aviation News*, British weekly, prepared this sketch from U. S. sources plus Messerschmitt patents. *Aviation News' Air War Correspondent*, *Aviation News*, reports the 163 has "amazingly fast climb" and top speed of over 550 mph., but short endurance.

tion, or communication under such control as Britain proposes, and contend that without further experience in international air transport, the nations would be well advised to avoid such con-  
tacts.

Brunei probably will obtain support of the Commonwealth for her position. They are meeting in Montreal Oct. 23. Other countries in the British orbit, Spain, Portugal, and the Middle East area, for instance, also may support her. But the American position is expected to win the favor of Latin America, as addition to that of China and Russia. U. S. delegates will argue that small countries might be deprived of satisfactory air services if left to the arbitrary decisions of an international authority.

**Agreement in Principle** — On other points, the British whose paper showed a wide area of agreement with Washington. A new air convention was proposed, recognizing national air sovereignty, right of transit, technical stop and commercial landing, need for prevention of uneconomic competition, and for standard safety regulations, radio equipment and weather reporting.

The British, however, proposed that the right of an airline to embark passengers in a second country destined for a third country should be a matter of negotiation. American delegates oppose this right.

can be settled at the conference on a "provisional" basis, to avert the lengthy process of bi-lateral negotiation. They point out that if such an arrangement is unsuccessful, it can be corrected later, since it is to be conditional.

## Flight Test Base of CAA to be Moved

Shift from Dayton to Bush Field at Augusta, Ga., to give full use of former flight training school street.

CAA flight engineers who have been operating a temporary flight test base for type-testing surplus planes at Dayton municipal airport will move their operations to Bush Field, Augusta, Ga., about Nov. 1.

The move, as foretold in *Aviation News*, Oct. 18, will give the CAA full use of the former flight training school airport, government-owned. Eight miles from Augusta, the field has three 3,000-foot runways, is equipped with two hangars of permanent construction and a shop, and barracks for trainees, which would be available for office or other use.

**Staff To Be Increased**—While approximately the same number of employees, ten, will staff the new operation, as have been assigned at Dayton, it is reported the staff will be augmented as operations at

Augusta are enlarged. At Dayton the CAA occupied one hangar at the Dayton Army Air base at the airport, and in flight tests shared the surrounding air with Army planes and commercial airliners.

The move has been interpreted as a long first step toward establishing a more expanded flight testing program in CAA, and the Ampaire operation probably will continue as a permanent flight test base, even after the type-testing of surplus military planes has been completed. Future testing would be in the line of CAA-sponsored development work on conventional and personal aircraft, and in coordinating and fostering individual company developments within the industry.

J. D. McCutcheon, manager of the Dayton base, is scheduled to continue in charge of testing at Anniston.

## AVIATION CALENDAR

[illegible]

## World Air Power Plan Challenged As Unsound Military Policy

Airmen see Durabarton Oaks program as glamorous and good morale builder but voice doubts as to actual effectiveness of system if not to test.

By WILLIAM G. KEY

Application of the international air force proposal of the Durnbar-ton Oaks conference is the subject of considerable discussion by air experts who view it from the strategic approach standpoint.

As originally conceived, particularly by armchair, the world as force would have been an actual air fleet in being. It would have been, supply channels, personnel and equipment necessary to carry out its mission of policing the globe. In the course of the concept's application, national geographies and national loyalties divided the basic principles until the draft worked out at the Drumhouston Oaks conference left little of the world-encompassing aspect.

**Group of National Air Units—**  
The Dumbarton formula would leave the international air force a succession of national air units.

(theoretically in a stage of constant readiness for movement to any threatening spot on the globe. Once there, each national unit would operate in concert with similar forces of other countries. Direction ostensibly would be in the hands of the Security Council's Military Staff Committee.

Airman realizes that to the general public this formula has a ring of grandeur and effectiveness. It is good morale, but they wonder if it is sound military policy.

In substance, here are some of the views of men who see in the Dumbarton Oaks air policy a challenge and perhaps dangerous fraud:

All power is replacing sea power as a world weapon both far wanted for the enforcement of peace. It operates on many of the same fundamental concepts Great Britain enforced an era of relative international peace not alone because it had a fleet in being, but because it had a fleet with operating bases in much of virtually every world danger point. It had a fleet train of supply ships unimpeded by any other country in the world, and a superior navy in its own immediate waters. The fleet was economically justified because it in turn protected the merchant marine and the colonies uncondi-

ing and protecting the bases, as well as the home country.

▶ The British fleet could not have been a force for peace if it had not had bases, from coaling stations to major operating installations, in strategic locations. However, it could not operate from Pearl Harbor, neither could the American fleet operate from Singapore, whatever the size of these bases, because they did not operate with common supplies, ammunition, personnel, food, clothing, in some instances fuel, or even operating practices. The American Navy in

the northern Pacific and in western hemisphere waters implemented the world domination of the British Navy, but they were not interchangeable. Only because their lanes frayed into friendly strategic needs around the world were they powerful.

An international air force would have the same world aspect, but without the implementing bases it becomes a sham. A striking force of American planes would be planned to fly effectively over Chinese bases, for example, any more than the American Navy could have operated from German bases. When American planes operated into Russia, special bases had to be built and supplied. The United States could use a Chinese base with any more speed and effectiveness than the B-29's have used Chinese bases. Even in preparation before the planes were even completed. On the other hand, it will be possible for the B-29's to use the Pacific bases because they are already there. The bases, secured by land fortifications and can be supplied adequately by sea and air. But they, too, have to be effective operations.

To those who cite the commercial air bases in a worldwide network, these airmen counterpose the situation that confronted the Allies at Singapore and Hong Kong. Unless the commercial bases and military bases built by this country for this war are main-



## ACCA AIRPLANE TECHNICAL COMMITTEE MEETS.

Engineers and technical representatives of 25 aircraft manufacturing companies gathered at Los Angeles for a two-day meeting of the Airplane Technical Committee of the Aeronautical Chamber of Commerce. One of the important discussion subjects concerned technical matters expected to receive consideration at the International Civil Aviation Conference in Chicago next month. Picture at left shows, left to right: C. L. Johnson, chief research engineer, Lockheed; Weyford E. Beall, vice-president, East-

seeing, Boeing; R. B. Maloy, technical assistant to director of safety regulation, Civil Aeronautics Administration; G. A. Page, director of engineering, Carnation-Wright Aircraft; W. C. Jannaceau, chief engineer, Piper; W. A. Kiebsig, chief, engineering branch, Santa Monica, CAA; Dr. Karl Arntsen, vice-president and chief engineer, Goodyear; J. E. P. Morgan, manager, Personal Aircraft Council (APCA); R. M. Wendt, vice-president, engineer, Taylorcraft.



## PNEUMATIC CUSHIONS LIFT PLANES

Hydraulic jacks, consisting of a pump and a cylinder, are used to lift the aircraft. The jacks are placed under the fuselage, wings, and tail. The jacks are used to lift the aircraft to a height of 10 to 15 feet. The jacks are used to lift the aircraft to a height of 10 to 15 feet. The jacks are used to lift the aircraft to a height of 10 to 15 feet.



#### HELICOPTER FLOWN TO C-B-I THEATER

Tail section of helicopter flown from the United States to the First Air Commando Group is exhibited at an Indian base. It is that of an Sikorsky, the first production model helicopter. They have been used in the Burma campaign to good advantage. Two newer models are in production.

tained to supply and repair depots for military use, protected by air units and ground troops with open supply lines to home bases, they will be equally ineffective.

**Protection Doubtful** — Under these conditions, any force concerned by the proposal, an inter-continental air force of the Dushanba type is not a protection against war, but an incitement to war. It will require major air, sea and land operations to get into use against any threatening country possessing any degree of power.

They claim that the proposed inter-continental weapon is dangerous, is based on a false promise that will delude the people of the world into a false sense of security and be ineffective when a showdown comes.

#### Ross Gets New Post

Frank E. Ross, who has been director of information for the Aircraft War Production Council, West Coast, has been named assistant in the western region office of the Aircraft Manufacturers Council and its parent organization, the Aeronautical Chamber of Commerce.

Ross will assist James L. Straight, western region manager in coordinating aircraft industry activities relating to conversion, surplus materials disposal and other transition problems.

#### Airframe Weight Triple '40 Average

Totals almost 10,000 pounds, compared with 3,000 four years ago, WPB reveals.

Present average airframe weight is now almost 10,000 pounds, compared with 3,000 pounds in 1940. War Production Board reports, with the forecast that by the end of this year average airframe weight will rise to approximately 10,000 pounds.

Development of larger and more powerful planes has been the outstanding characteristic of the nation's aircraft production program as it has been analyzed each week by *Aircraft News*, which showed an extraordinary decline in the number of airplanes shipped monthly.

**September Built Total Off** — This trend was emphasized by September production when 7,588 planes were shipped, as against 7,007 in August and 8,117 in March, peak month in last output.

Airframe weight last month, excluding spare parts, was 79,900,000 pounds compared with 79,590,000 in August and 88,655,000 in May, the record month in weight. At the same time, weight per plane, at 10,770 pounds, was two per cent greater in September than in August.

WPB released the following

tabulation of average airframe weights at various points in the development of the aircraft program:

September	Pounds
1940	3,000
1941	3,270
1942	3,950
1943	6,950
1944	10,770

This shows graphically the extent of the aircraft industry production achievement and points up once more the importance of airframe weight as a major unit output.

Production now is concentrated on tactical types—bombers, fighters, naval reconnaissance and transport—in contrast to the earlier period when the program was expanding rapidly. In 1940, for example, 63 out of every 300 pounds of airframe weight accepted was in tactical planes and 15 percent in non-tactical types—transport, trainers and special patrol types.

Last month, 96 out of every 300 pounds was in bombers, fighters, naval reconnaissance and transport. The change reflects continued emphasis on larger and more powerful fighting planes and the addition in the Army and Navy training programs. Emphasis on heavy bombers continues.

#### Plan JP Research In New MIT Lab

Intensive research in electronics and new methods of propulsion, including gas turbines and jet units, will be started shortly in new laboratories at Massachusetts Institute of Technology, according to a report made by Dr. Earl V. Compton, president. The Institute's faculty includes Dr. Jerome C. Hunsaker, chairman of the National Advisory Committee for Aeronautics.

**Research Projects** — Compton's report to the corporation disclosed that volume of war projects, including research, reached a value of \$53,000,000 this year at MIT.

#### E. W. Higgins Dies

E. W. Higgins, prominent school and fixed base operator, died at Columbia, Missouri, October 15, and funeral services were held Sunday in Edgewood. E. W. Higgins, Jr., will carry on the business established by his father. He is a former Pan American-Grace Airline pilot and is now in naval aviation.

## Loening Sees Need for Imagination, Talent, Courage in 'Copter Field

Chairman of NACA helicopter subcommittee tells Washington Aero Club that development of rotor craft still is in hands of fearless young engineers rather than is elaborately equipped research centers.

The multitude of helicopter types now being developed indicate they are still in the stage where talent, imagination and courage are needed more than concentration in research centers, Grover Loening, chairman of the helicopter subcommittee of the National Advisory Committee for Aeronautics, believes.

In the only recent comprehensive picture of helicopter development available to the public, Loening qualified to appraise both secret and known experimentalities. Mr. Loening says he believes that progress has been rapid, and that the more encouragement given young engineers, the more quickly and completely the problems still facing the new vehicle will be solved.

**Many Versions** — There are more versions in fundamental type in the helicopter than there were originally in the airplane, Mr. Loening points out, and he believes it will require a longer time to weed out unsatisfactory models and leave the best ones.

But there is still much to be done to give the public a mental helicopter, in Mr. Loening's view. Some of these things are:

- Vibration must be overcome.
- Faster cross-country speeds are vital.
- Controls must be simplified.
- Production costs must be cut.
- Change of the helicopter is likely to be quite different from that of the airplane, and Mr. Loening does not see any rivalry between the two types. Neither does he see rivalry between the helicopter and the automobile. The proper perspective is that of dealing with a new vehicle, in a class by itself.

**First-LePage Model** — In addition to the first successful helicopter, the Sikorsky now in use by the Army, Mr. Loening recently told the Aero Club of Washington of the background of other models he feels are progressing along the right line.

One of these is the First-LePage twin-rotor helicopter which he describes as most successful, and with a design lending itself to large

size and heavy load carrying, with four rotors.

**Hiller's Success** — The work of Stanley Hiller on the West Coast, which now has the financial and engineering backing of Kaiser Cargo, Inc., is Mr. Loening's view shows great talent. He points out that young Hiller did not know that engineers had largely rejected the coaxial type helicopter, and to the surprise of many engineers designed one that works well. It is too early, however, to appraise ex-



**Jet-Propelled Helicopter Principle:** Serious studies of jet-propelled helicopters are now well advanced. Grover Loening, chairman of the helicopter subcommittee of the National Advisory Committee for Aeronautics, says Principle involved is illustrated in Mr. Loening's drawing above.



**Higgins' Double See-Saw Helicopter:** Stream-lined Higgins helicopter, designed by Evan Dean, is reported to have made limited test flights, followed with a rope, at New Orleans. Grover Loening, rocketing aircraft expert, described the Dean design recently as a variation of the see-saw type, with solid rotor blades which pivot at the center.

## Study Jet Helicopters

Provisional of helicopters by the jet principle, either with jet engines or with a conventional power plant, is being worked on in secret in "three or four" places in the U. S., General Leaning has disclosed.

He credits Professor Stalker of Detroit and the late Professor Montgomery Knight of Georgia Tech with early disclosure and proposal of the principle.

Mr. Leaning says many engineers believe it has a promising future. It offers another method

of eliminating the torque problem. The helicopter rotor drives itself and the rest by the reaction of a jet of air discharged along the trailing edge of the blades or at the tip. There is no torque since motor power is not applied directly to the rotor shaft. An ordinary engine can be used, driving a blower which is cascaded to the jet at the tip of the blades and drive the rotor around very much as the familiar modern spray is driven by a steady jet of water.

able control, particularly in turbulent air, and introduced new rotor features.

It is this multitude of types and the incorporation of rejected ideas into successful models that leads to Mr. Leaning's belief that the search must be continued by those with the talent, imagination and courage to try new things, rather than to relegate failed development of the helicopter to "long-haired research stiffs with elaborate facilities who spend so much time and money chasing down the ultimate details of an original idea that was wrong to start with."

Most designs now flying he classifies as too slow to survive to any great extent. They are more complicated to fly than an airplane and cannot carry anything like as much load per horsepower.

## Bill to Ease Curb On Modifications

WFBs under reported in process of amendment with view to reducing materials for conversion of surplus planes.

An amendment to L-48, War Production Board order allocating priorities to civilian and commercial aircraft, which will permit modification of surplus government planes is clearing through WFB channels and should be passed almost immediately. The amendment was being held up on a technicality. It is termed Division 1 to L-48.

Through the amendment to L-48, it will be possible for manufacturers and others to obtain necessary modification material to convert them to commercial use or to meet requirements for Civil Aeronautics Board certification. Some

surplus models will require modification before CAA will certificate them for civilian use. This is the first time a procedure has been set up whereby modification material can be obtained without diversion of Army or Navy materials for the work.

**Materials Negligible**—The materials used in connection with small trainers and liaison planes will be negligible, but in the case of fighters will be in greater volume. The amendment against postal donations, even these will be insignificant.

Nonetheless, airplanes returned to the services have been planes returned from the post at these taken over by the Army, or replacements for these craft. Materials could be assigned from Army-Navy stocks for this work to place the commercial ships in condition comparable to that when they were taken over.

Since any further plane returns will be allocations of surplus planes through Defense Plant Corp. and the Surplus Property Board, it will be necessary to obtain priorities for material through civilian channels.

**Lightspeeds**—Meanwhile, procurement of lightspeed materials for conversion of surplus planes are moving slowly through WFB Engineering and Research Corp., builders of B-29s, are further advanced than any other. The long-range bombers have been handled through the Hallamshire office of the War Manpower Commission and returned to WFB for final handling. WMC will not reveal its findings, and it will have great bearing on the decision, since the manpower question is paramount now. One complicating factor is reported to be a new service contract given Engineering and Research in the past few weeks.

## McCarran Bill Leads To Monopoly—Royce

Airline policy chairman reveals details of latest argument against "choosen instrument" operation in international air transport.

Charging that a "choosen instrument" is a monopoly and is "the first step toward cartels," Alexander H. Royce, chairman of the Airlines Committee for United States Air Policy, representing all American lines except Pan American and United, last week made public the committee's position on international operation after the war. The committee released a 27-page documentary report in which it stated key issues and discussed them with factual evidence to support the committee's stand against a "choosen instrument."

The record of the domestic airlines in this country has provided a sound basis for future development, declared Mr. Royce, and this successful operation offers a pattern for international air transport.

The United States has been committed to an established policy for domestic and international air transport for more than six years. The chairman continued, charging that the McCarran Bill, now before the Senate, provides a chosen instrument which would lead to monopolistic government ownership or control, which, he said, has proved disastrous.

The three key points discussed in the committee's report are:

1. The United States already has an established policy for both domestic and international competition in the public interest in time of peace and in national interest in preserving adequate defense resources.

2. The McCarran Bill would create a single "choosen instrument" to represent the entire field of international air transport.

3. The "choosen instrument" is a monopoly, which, if it is a "choosen monopoly," a single owner or government monopoly.

The chairman declared that the first step toward "cartels" is the creation of a monopoly. He said that any international air transport which monopolizes themselves to negotiate with foreign countries. The chairman declared that the McCarran Bill would not eliminate the development of a monopoly in the field of international air transport.

The "choosen instrument" policy would, in effect, make one American plane from the field of airlines.

## Over 100 Military Plane Types Eligible for Civil Certification

Out of six warplanes tested by CAA at its Vandalia base, only one, the Boeing C-73, acceptable without modification.

More than 100 military aircraft types are eligible for civil certification, most of them on the basis of similarity to previously approved civil models.

Six military models have been tested by the Civil Aeronautics Administration at its Vandalia, O., office, of which only one has been found eligible for certification without modification. Two are now being tested and three are scheduled for testing soon.

Approved plane is Boeing C-73, which is identical to the Boeing 370D except for power plant changes found to be satisfactory.

**Naval Trainers Offered**—The Naval Aircraft Factory N2N-3, a trainer, will be accepted with modifications. Some of these ships are now being offered in surplus sales.

Fairchild PT-23, not eligible at present, is being examined by Fairchild to correct features standing in way of approval.

Reynolds AT-52 has been ruled ineligible on basis of flight characteristics.

North American O-47R, includ-

ing at present, is being studied further and may be eligible with modification.

Cessna-Cessna's C-35 will require modifications, now being engineered, before being eligible for certification.

New being tested are the Douglas C-48 and the C-49. Scheduled for testing are the Lockheed AT-16 and A-38A, and the Stearman PT-17.

Approved on basis of similarity to previously approved models are the Aeronca L-3 series from B to F models and the TG-8, B and C and O-28B, D, E, G, H, FAF, E, G, H-TAC and F, G, H, C.

The following Beech military models can be converted to C-155 civil models: UC-45A, UC-45A-B, AF-7, AT-1A-B-C, JRB-1-3-4, and SNB-2 and 3-C. The UC-45A is approved as a D-73R, the 49C as a B-17D, the 41D as a B-17H, the 43B as a C-155 and the 41B as a C-155.

Consolidated UC-77B is certificated as a C-43 and the UC-84 as a C-163. Commonwealth Reaver UC-102 is approved as a 1400R and the 163A as an S-18.

**Deputies**—The Douglas C-47 and 47A as DC-3C, A DC-3AV and the C-46 and C-46, C-52 and C-52B, C-53 and 53B-C-D and C-66. As DC-3V, the C-49 and 49A through 49E, C-50 and 50A-B, C-49 and C-51.

Fairchild PT-19, 19A and B as M-62A's and the UC-86 as the 2448. Grumman UC-169 as the C-54A, and the UC-16 and C-66 and 16B as DGA-15B and DGA-15J.

Inventories L-6, of which some are being offered as surplus, are the equivalent of the S-181.

Again in the transport field, Lockheed C-57 and 370 are certificated as 16-6C, the C-58 as 16-6T, the C-60 as 16-5E. Navy version, the R-54-B as 16-6C, and R-54-B as 16-5E-B as 16-6C.

**Types**—The Piper L-4 and L-4A and D1E are certificated as 230-6, the L-4F as 3A, the L-4G as 3B and the TG-6 glider under the same civilian designation.

Ryan PT-23 and 23A certificate as the 370-B.



PAPER FUEL TANK!

This bench-tested paper fuel container is an extra capacity gasoline tank found by Royal Air Force men at a captured Nazi airfield in Belgium. It is designed to be dropped by the plane after use.

Schweizer TG-3 has a civilian certificate as the SGG-3.

Spartan UC-71 is civilian TG-1.

Beech L-8H is the 10A, 7W, the SR-49, UC-1A, the SR-165, the SR-49 and SR-49, UC-18C, the SR-49, UC-18E, the SR-49, UC-18F, the SR-49, UC-18G, the SR-49, UC-18H, the SR-49, UC-18I, the SR-49, UC-18J, the SR-49, UC-18K, the SR-49.

In the light aircraft series, the L-2 and L-2C are certificated as the DC-35, the L-2A-B and M as the DCC-68, the L-2F as the DC-35 and the L-2H as DC-146, L-2J as DC-146, L-2K as DC-146, and the L-2C as DC-146.

Waco model certificates are: UC-15B as RGC-6, UC-15B as VKA-7, UC-15B as 20C-7, UC-15B as 20C-7, UC-15B as 20C-7, UC-15B as 20C-7.

## Vanaman Prisoner

Brig. Gen. Arthur W. Vanaman, first American general reported to be held a prisoner by the Germans, was captured after the plane on which he was acting as observer, was shot down in a recent bombing mission. General Vanaman was former American military attaché to the air in Germany before the war, later serving as commanding general of the AAF Materiel Center, Wright Field, and as commanding general, Philadelphia City Air Service Command.

## Study Compromise Contract Termination

Washington circles examine various types of agreement affecting aircraft industry.

Study is being given in official circles in Washington to various types of compromise between direct and indirect settlement of terminated war contracts affecting the aircraft industry as preliminary negotiations point up the complex problems that face the industry and its large number of aircraft subcontractors.

In an effort to meet the peculiar termination problems of aircraft manufacturers, it is now planned to assign teams of contract termination officers to advise aircraft plants within the next few weeks to assist them in pre-planning termination settlements.

**Top Men Urged for Job**—Both industry and government officials in Washington have been arguing

industry executives to assign top men in pre-planning on termination contracts, while some companies have moved rapidly on this suggestion, others were reported lagging and thereby complicating and prolonging termination settlements.

Mr. Frederick M. Hopkins, Jr., chief of the personnel division of the office of assistant chief of air staff, material and service, AAF, has urged earlier filing of termination claims by aircraft contractors, and reported that the time lag between effective date of termination and submission of claims to the AAF has increased during the first half of this year.

**Settlement Delays**—Total of 906 termination claims representing over \$1,000,000,000 in face value of contracts cancelled by the AAF in the first half of the year are more than four months old and in 318 or over 68 percent of these cases, no claim has been filed. General Hopkins said that AAF is setting claims on an average of 66 days from submission but on the average 120 days are elapsing before claims are submitted by the contractors.

Special problems facing the aircraft industry are understood by the AAF and General Hopkins, based among these the financial position of the industry, the problem of allocating inventories to specific contracts, the large number of aircraft manufacturers and subcontractors settling cost-plus-fixed-fee contracts.

**Complicated Problem**—Cost-plus-fixed-fee contracts cover about half the outstanding contracts in the industry and present one of the most complicated settlement problems, particularly as to methods by which settlements are reached, and the finally which they will have, once reached.

All vouchers must be reviewed by the General Accounting Office as well as by Army auditors, either of whom may take in appellate view of any cost question, under present methods.

General Hopkins commented that the problem on the day of termination, therefore, is whether all these questions may be included within a negotiated settlement, which will be final between the government and the contractor except for mutual mistake or fraud.

**Questions Raised**—To aid in contract settlements, government agencies have accepted a simplified termination questionnaire designed to result in large savings of time and expense. It was drawn by a special subcommittee of the advisory com-

mittee on government questionnaires, headed by P. Stuart Fitts, president, an official of the United States Chamber of Commerce.

## No. American Makes New Secret Planes

Holds contracts for 500 of restricted models in addition to approximately 10,000 standard fighters, report to stockholders reveals.

Disclosure that North American Aviation, Inc., now holds contracts for more than 500 planes of "new secret types" in addition to those for approximately 10,000 standard fighters was made by a J. H. Kandelberger report, in a report to the annual stockholders meeting at Wilmington, Del.

He reminded them, however, that all contracts are subject to the convenience of the government and are liable to termination on outbreak as the war picture changes.

**Speed, Check Increased**—Airplane designers at North American are engineering a fighter 34 percent faster with a rate of climb nearly double that of present fighters, he said, and bombers which will be 50 percent faster and have operational range from 20 to 30 percent higher than current models. These planes may be in production within two years.

Kandelberger's report covered 1944 operations and referred to a well into an analysis of North American's engineering and production achievements during the past year, which included:

Production of 60 percent more Mustang fighters than American's bigwings plan today than a year ago; 2. An average monthly production of 30-35 Mitchell bombers at the company's Kansas City plant, 46 percent greater than in 1943; 3. Average production during each month of 1944 of Mustang, AT-6 Texan trainers and B-24 Liberator bombers at the company's Dallas plant in excess of the production record of planes the government has ever received in one month from any other single manufacturing operation.

**Costs Reduced**—This production, he said, enabled the company to produce a B-24 Liberator in government of P-51 Mustang by more than 18.3 percent over the cost on Jan. 1, and were instrumental in effecting a reduction of 34.5 percent in cost of B-25 Mitchell, compared to last Jan. 1.

## Data on RAF's New Tempest Released

Details of the Royal Air Force's Hawker Tempest, now off the British secret list, disclose that the successor to the Hurricane and Typhoon is being developed as a fighter against German flying bombs, having knocked down more than 600.

Late in the pre-war years, the Tempest is a single-seat low-wing monoplane, designed by Sydney Camm. It is powered with a supercharged Napier Sabre engine of 2,300 hp and has a de Havilland variable pitch four-bladed propeller. Armament consists of four 20 mm cannon. Wing span is 41 feet, length 39 feet, 2 inches, height 14 feet, 10 inches, with tail up and side windows and 16 feet 1 inch with tail down.

Specifications was released in London by the Air Ministry and in Washington by the British Information Service. It was disclosed that in addition to their operations against the flying bombs, Tempests also are operating from Belgian bases against the Luftwaffe's swallow-tailed jet glider Messerschmitt 262.

British pilots report speed and speed handling of the Tempest is such that they feel the German fighters FW 109s and Me 109s easy to shoot down than flying bombs.

Tempest resembles the Typhoon, but with the elliptical wing of the Spitfire and the high tail fin rising from the fuselage in a curve similar to the P-51 Mustang.

Forrest



France Vanderlip



Witherspoon

## 35-40 Place 'Copter Buses Forecast

Author of Anything a Horse Can Do predicts regular service to areas lacking conventional port facilities.

Helicopter buses capable of carrying 35 to 40 passengers and a small amount of mail and baggage, undoubtedly will operate within the next decade as commercial services to serve communities without convenient airport facilities. Col. H. Franklin Gregory, AAF Wright Field helicopter specialist predicts in his newly published book, *Anything a Horse Can Do* (Royall & Henshaw, New York).

Gregory, who has flown most of the more successful helicopter types now under development and is recognized as a pioneer in developing rotary winged aircraft for military uses, points out a general downward trend created by the helicopter's rotors would "blow all the neighbor's clothes off the line, scattering paper and trash in all directions, and when it small hurricane in landing and taking off." He predicts that there will be thousands of helicopters in use within a few years, but not millions.

**15-Ton Buses**—The helicopter buses he believes may have a gross weight of 15 tons, and based on present helicopter design data would require approximately 2,300 hp, and might have as many as four rotors, cranking at between 1,000 and 145 rpm, with the additional vertical ascents and descents.

Two-place helicopters, powered

with 130 to 150 hp engines, highly streamlined and with excellent stall appeal, will be able to fly non-stop from New York to Washington in less than three hours, and will have average ceilings enabling them to fly with safety over any mountain ranges on this continent. Larger four-place helicopters with 300 to 600 hp engines, will equal in performance the two-place models. They will be too high for the average wage earner, with the 6-place helicopter costing about \$16,000 and the smaller helicopter proportionally less. Bayers will be in the income class specified as potential owners, even after substantial mass production, he says.

## France Heads C-W St. Louis Plant

Charles W. France, Curtiss-Wright vice-president and general manager of the Airplane Division Buffalo plant, is returning to St. Louis as general manager of the plant. Since St. Louis will be the first plant to produce the first version of the commercial version of the Commando, France's long experience in commercial aircraft and the Airline field will be utilized there. N. F. Vanderlip, senior manager of the Columbia plant, becomes general manager of the Buffalo plant producing Convexo.

In addition, Vanderlip will coordinate certain Navy experimental work at the Buffalo plant. At Witherspoon, general manager of the St. Louis plant, returns to Buffalo as director of business research replacing Dr. Donald H.

Davenport, resigned. Ralph A. France, principal superintendent of planning and tooling at the Columbia plant, becomes factory manager succeeding Vanderlip.

## Human Pick Up

Reports from Europe of the use of the aerial pickup system in "rescuing" individual prisoners from the ground of occupied countries in which the same was that first aircraft, and later gliders have been used by air forces in flight, are substantiated by the statement of All-American Aviation's president, Halcyon R. Bader.

"We know it can be done," it is understood that the firm has developed plans in Europe in the result of developments carried on in this country for more than a year, before the device was ready for use. Early experiments include the lifting of sheep from the ground by the pickup harness which is hoisted, secured, and then to lift humans beings successfully.

The London Star reports that the pickup harness is dropped from a plane to the person in an occupied country; one of them runs on the harness which is attached to a tow rope, and the pickup plane hauls him into the air "completely free of risk" and with "virtually less than a parachute jump." The Star says the Germans know of the system but are powerless to prevent it, and that it is the method by which many American prisoners in the United Nations from inside occupied countries.

## TELLING THE WORLD

John Matland Cook becomes new advertising manager for Northwest Airlines. The newly created advertising department will coordinate advertising between the company and the advertising agency based in New York.

for Delta Air Lines, and as business development manager for the Kansas City Journal. Other advertising positions include Ben Rothbaum and the Boston Star in Milwaukee.

James C. De Long, New York advertising executive, has been named director of advertising for Transcontinental & Western Air, Inc. He was with American Overseas Service before becoming advertising editor of the Financial World in New York.

1929. Later he was appointed vice president and advertising director of the magazine. In 1933 he became New York advertising representative of Curtis Publishers and then was advertising director of General Cable Corp., New York. De Long has headquarters in Kansas City.

## PRIVATE FLYING

### Improved Luscombe Silhouette Prepared for Post-War Market

Engineers working on secret designs for peacetime luxury lightplane, described as all metal but fabric wing covering.

By BLAINE STUBBLEFIELD

Luscombe Airplane Corp. will reintroduce its model Silhouette lightplane at the market, with a number of major improvements, as soon as war contract requirements will permit. Meanwhile engineers are working on post-war designs which they are not ready to discuss.

About 1200 Silhouettes were delivered between initial production in 1937 and the company's conversion to aircraft sub-assembly war contracts. Luscombe officials estimate that about 1,000 of them still are flying in the U. S. A great many Silhouettes were in war training service, and some there have been popular with leaders in the surplus aviation market.

**► In \$3800 Class**—The Silhouette is all metal except fabric wing covering in the two-thousand-dollar bracket, and is one of the most eye-appealing designs in the personal plane field. High wing attachment gives a good downward view from the cabin, which is basically described as luxurious. Dual stick control, side-by-side seating of two, highly refined arrangement for instruments and radio, justify its inclusion in the quality class. Range is about 500 miles, with 22 gallons of gasoline, burned at five gallons per hour. Three alternate engines are offered. The 75 hp Continental has fuel injection instead of carburetor, and does not freeze.

Luscombe is making its bid for position in the private and training plane market on characteristics described as equal to or better than those of other conventional designs in this class, plus metal construction. Company engineers believe the trend is toward metal in lightplane as well as in transport and military types. They agree personal aviation needs the permanency and durability of metal. And they add that they can easily replace

of their most interesting solid points in under the head of maintenance. War training experience, they say, has revealed the common factors that metal design and penetrations are hard to repair. According to their reports from training contractors, dents are as easy to strengthen as cracked or fatigued. Prestressing and weakened stresses are quickly and neatly repaired with new sheet and rivets.

Metal has important advantages in parts replacement, too, Luscombe engineers say. For example, the skin-stressed fuselage is made in several sections. These sections are interchangeable. A fairly bad wreck can be salvaged,

the present fabric wing covering with a metal skin.  
► **Maintenance Selling Point**—One



**Post-Equipped "Silhouette"**: This Luscombe Silhouette debuts as a warplane. It is useful for landing at air harbors such as those under construction along New York waterfront.



**Luscombe's Panel**: Radio equipment, instrument panel and dual 658490s of Luscombe Silhouette Model 1D are shown here.

at relatively low cost, with parts replacement saving the expense of rebuilding.

**► Experience Factor**—Luscombe's pre-war metal experience is being augmented by assembly production of metal sub-assemblies for other warplanes. These include bomb bay doors for the Grumman Avenger, radium and vertical fins for the Grumman Hellcat and Wildcat, fuel tanks for the Curtiss Corsair, gasoline tanks for the Martin Marauder, carburetor airstraps, auxiliary booms and all other metal items. The company is the largest producer of examination booms, and is sole producer for Grumman. Their engineers have made a special study of this item, and have cut the cost in half.

Well before the war, Luscombe was the only plant in its field, officials say, having an overhead receiver system and a mechanically reeled line. It was among the first to use Massacre design for wing fuselage and cowling sections. The management believes Luscombe's combination of experience in metal, in volume production methods, plus many new devices and methods developed in connection with war work, can be turned into quality metal airplanes at minimum cost.

**► Good for 2,000 a Year**—Prior to conversion, Luscombe plant reached an average of 30 units per week, and was being geared up to a volume of 2,000 per year. Most of the facilities are owned outright by Luscombe. Defense Plant Corp. bought a small interest. Located in the country a few minutes out of Trenton, N. J., the property has plenty of room to expand, and has an adjacent airport.

The first plane built by Luscombe, called the Phaedrus, powered with a Warner radial 146 hp engine and listed at about \$4,000. In 1914, then came the Model 29, in 1926, with a 90 hp radial, selling at about \$4,000. Both were metal, high wing monoplanes. First of the Silhouette line was the Luscombe "48," with a Continental horizontally opposed 60 hp engine, seating two persons, side by side, and selling at \$1,955.

In 1929, Leopold H. P. Klotz acquired a controlling interest in the company, and is now its active head. Mr. Klotz was then, and still is, impressed by the vast production possibilities of light metal airplanes. Further refinements are planned.



**Pre-War Luscombe**: Twin liner of the Luscombe Silhouette, one of the few metal fuselage lightplanes in existence before the war, are apparent in this aerial photo.

### Parks Offers New Plane Insurance Plan

Program announced in connection with interpurchase arrangement for buying *Avenger*.

A new airplane insurance program, with costs reduced from 35 to 50 per cent, has been announced by Oliver L. Parks, East St. Louis, Ill., in connection with a three-purchase arrangement for buying *Avenger*. Spurred characterization of the airplane with a decisive factor in obtaining the lower insurance rates.

The rates are applied to the *Avenger*, only when it is sold by Parks Aircraft Sales and Service, in collaboration with the Merchants Bank of St. Louis and General Insurance, Inc., representing the St. Louis Fire & Marine Insurance company.

**► Covers Entire Family**—The plan without extra charge also permits members of the buyer's immediate family to fly his plane, as well as any certificated pilot who has the buyer's consent. Standard policies cover only the purchaser and/or other individuals specifically named.

Three types of policies are offered: "limited hull" coverage, designed to fit this model plane; "named-peril" coverage, limited to stated risks; and "comprehensive hull" coverage which approximates the "all-risk" policy, the broadest coverage written on private planes. Rates ran from \$4.50 per \$100 of insurance for the limited

ated hull policy, to \$6.00 for the named-peril policy and \$9 for comprehensive coverage.

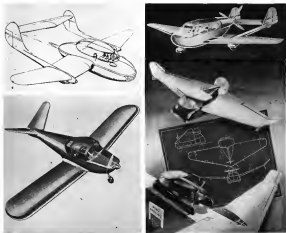
**► Rates and Tables**—The bank has prepared a booklet setting forth details of the various insurance rates and tables showing finance-insurance payments under contracts running from 90 days to six, 12, 18 or 24 months. Also shown are insurance tables on liability and property damage, passenger liability when planes are not operated for hire, hull insurance rates on other planes and price lists for all well-known types of private-owner airplanes.

The Parks program proposes when new planes are available to sell *Avenger* complete with flight instruction up to solo and two hours additional club time over the next 15 hours of flying, all included in the purchase. The company now has nine of the planes, and solely for demonstration and instruction.

### Post-War Market

Sale of 100,000 private planes to Americans within one year after the war was predicted by William Brotherton of Ryan Aeronautical Co., speaking recently before the National Aeronautic Association quarterly meeting in Sacramento, Calif.

Brotherton said this country will need 12,000 airplanes, compared with the present 2,500. He reported the United States has trained 100,000 military pilots a year, at the peak of its present war training program compared with 25,000 trained pilots five years ago.



Upper left: Nonprofessional Winner; upper right: Professional Winner; lower left: Unorthodox Tail Design; lower right: Readable Plane Entry

## Plane Preferences Shown in Contest

Both best prizes awarded by *Popular Science Monthly* to amateur and professional entries are for models of four-place aircraft with twin tail booms.

A trend toward public preference for four-place personal planes with twin tail booms enclosing the fuselage, is apparent in the announcement of winners in the *Popular Science Monthly* personal-type airplane design competition.

Both Pts. Don Leroy Fotheringham, 18-year-old Marine who won first amateur prize, and Donald J. Wheeler, Seattle, Boeing engineer who was first professional prize, chose this type of plane as their personal preference. Both received \$2,000 war bonds.

**Anti-Collision Devices** — Pts. Fotheringham's plane design inserts its tail high, to avoid inter-

ference with its gusher jet-propulsion engine. It is equipped with anti-collision devices, television screens and push-button radio for instrument flying. Engineer Wheeler's design uses a conventional engine placed in fuselage position with three-bladed propeller, while his craft's tail surfaces are not elevated.

A total of 3,345 designs were submitted in professional and amateur divisions of the contest, by designers from all 48 states and 10 foreign countries. Statements accompanying the designs indicated few wanted rotary-wing aircraft, and that a big majority would prefer to pay \$1,500 to \$3,500 for a plane, with better performance, than to pay below \$1,000 with minimum conveniences. Favored speed was about 130 mph.

**4-600-Mile Range**—Range requirements averaged about 500 miles. Statements emphasized need for higher speeds and longer range than has been designed into small

private-owner planes up to this time. The twin tail boom design was favored because of protection afforded by screening booms from whirling propeller or puffing jet. The design also was liked because of improved visibility it affords.

Retractable tricycle gear, slats, flaps, dual controls so that both persons in front seat could take turns flying, were highly favored. Other designers, in smaller numbers called for amphibious, sound-proofing, removable wings, wood or plastic construction, self-starters, integration of rudder and aileron control.

Judges were Col. Earle Johnson, national CIP commander, Glendon Parks, president of Parks Air College, East St. Louis; Edward S. Evans, Detroit; Lieut. Col. Leon B. Lent, National Transportation Council; Arthur Wakeling, assistant editor, and C. B. Colby, aviation editor of *Popular Science Monthly*.

A total of \$5,000 in war bonds was distributed among 46 winners.

They wouldn't fly without them...



A white kitten was the mascot of a troop carrier plane in the New Guinea area. She gamboled around the plane, quite at home, 10,000 feet above the Pacific.



Speaking of animals—a famous war correspondent always carried a little brown teddy bear whenever he traveled by plane.



A waist gunner on one of our four-engined bombers claims it's a locket containing a few ringlets of his wife's blonde hair that always brings him back safe and sound.

Ethyl antiknock fluid goes along with fighting planes powered by U.S. made gasoline. It goes into practically every gallon of fighting grade aviation fuel—which is one reason why our fliers not only have the best gasoline but plenty of it.

**ETHYL CORPORATION**  
Glynn Building, New York City



ETHYL is a trade mark name



**Proposed East River Sky Dock:** Design of P. H. Spencer, Republic engineer, for a New York city dock or harbor for amphibians, seaplanes and helicopters. They could be built by \$11-in sleep East River drive to provide a parking and service area for 40 to 50 aircraft.

## Air Harbors Urged For N.Y. Waterfront

Proposed believed logical solution to problem in view of extremely limited space available for planes.

Proposals to utilize Manhattan's waterfront areas for air harbors may be New York's most logical solution to the problem of providing landing and service facilities for personal planes. There is serious doubt that either convenient space may be found in the metropolitan areas which can be converted to airports, at cost low enough to warrant its use.

Two designs for air harbors which will provide facilities for helicopters as well as for personal amphibians and seaplanes, prepared by P. H. Spencer, assistant chief commercial project engineer, Republic Aviation Corp., Farmingdale, L. I., are being sponsored by the aviation section of the New York Board of Trade.

**May Roof Over Pier:**—Most novel of the two ideas proposes to roof over two adjoining piers on the North River or elsewhere, to provide a flat landing and parking surface 320 by 300 feet for helicopter operation. Parking area for approximately 50 helicopters or amphibians would be provided here, in addition to the landing area. The upper surface also would provide space for waiting rooms, restaurant, administration and operation office, control tower, elevator platform and service facilities. On a lower level, beneath the roof, an enclosed area, would provide 101,600 square feet for storage and parking, 11-

500 square feet, a ramp 150 by 100 feet, and space for a control tower, service drive and service hangar. Forty-five to 50 medium size, amphibians, seaplanes or helicopters could be parked.

**Potential**—Before wartime restrictions went into effect some 25 to 30 others daily made amphibian landings on East River at the foot of Wall Street, and others at 33rd Street. Spencer believes that, with small low-cost amphibians, seaplanes and helicopters "coming into production now for post-war delivery" a very large percentage will be available.

Pre-war amphibians and seaplanes would be larger, more expensive craft than those expected to be used in the post-war era, and usually were flown by professional pilots who would land the owners and passengers, and then had to fly the planes to other landing places because there was no facility at either 33rd St. or Wall St. to moor or store.

Several aircraft manufacturers are designing small amphibians for post-war use similar to those suggested by Spencer, among them, his own company, Kellelt, and Allied Aviation Corp., Cockeysville, Md.



**Piers Would Support N. Y. Sky Harbor Project:** Landing and service facilities for helicopters, personal amphibians and seaplanes, would be provided on the Manhattan water front, by placing a flat-roofed pier over two piers, as shown in the above design of P. H. Spencer, Republic Aircraft Corp., project engineer.

## ANSWERING SOME HELICOPTER QUESTIONS

The past century has witnessed the development of the telephone, electric light, telephone, automobile, airplane, radio and many other industrial marvels, which are still in the process of transforming living conditions throughout the world. And today there is wide enthusiasm over another revolutionary development—the helicopter... and wide curiosity concerning its future possibilities.

Therefore it is timely to present a concise and factual appraisal of the helicopter and an informed assessment of the part it may play in future progress. As one of a dozen or more advanced and conservative industrial organizations engaged in helicopter development—the oldest in the rotary wing field—Kellelt Aircraft Corporation accepts this opportunity to present some helicopter facts and to state the opinions of its management and engineering staff on the future of the helicopter.

### DEVELOPMENT HAS BEEN RAPID

Today, in the United States, a half dozen or more different helicopter types are flying. To the best of our knowledge, helicopters are flying in no other country, and only in the United States is effective research and production being carried on. This is largely due to the sponsorship received from our military services during the war period.

### WHAT CAN HELICOPTERS DO?

The helicopter, as a means of normal flying operation, can be straight into the air from a standing start, land in the same way, bring mountains in the air or at low altitude over a given point for as long as the pilot wishes, fly backwards as easily as your automobile forward, pivot almost sideways, fly safely inside a large automobile.

### ARE HELICOPTERS EASY TO FLY?

The men who pilot helicopters today are chiefly trained, experienced men. Flying a helicopter is not a job for a novice. Many controls must be coordinated and the pilot must possess excellent skill and judgment. However, these "requirements" are extremely average individuals and one or two of them had never had experience in flying before they stepped into helicopters. It is reasonable to expect that "ease of flying" will be improved with further engineering development.

### WHAT WILL HELICOPTERS COST?

Helicopters, if they could be purchased on the market today (which military requirements will not permit), would be more expensive than the most costly automobile. Engines, intricate transmissions, control mechanisms and rotor blades require special design and construction methods. Helicopters are likely to be costly for some time to come. Of course, if the efficiency of mass production and the competitive surplus spaces are permitted to have their effect, the cost



It is certain to come down

### ARE HELICOPTERS SAFETY?

It has not yet been demonstrated that a helicopter is any more safe or less safe than other aerial vehicles. Conventional airplanes have established impressive records for safety.

### WHO WILL USE HELICOPTERS?

It is our belief that helicopters will have their first important work in the fields where other forms of transportation cannot serve. In many situations the helicopter will introduce important savings of time, manpower and money. For instance, in the spraying of agricultural crops, mapping and servicing of cross country oil pipe lines and electric transmission lines, forest and shore patrol, prospecting, mail and passenger service to areas otherwise inaccessible by air.

### WILL HELICOPTERS BE FAST?

As searcs, helicopters today are not very fast. To a world which expects 600 m. p. h. flights in commonplace, they may never become "fast" aircraft. BUT the helicopter's maneuverability is much faster than automobile or most transportation, and even faster in some cases than the combination of land and plane craft which require dry air transport entails. The potential helicopter will not require a trip to an airport as a necessary preliminary to a flight.

### WHAT ABOUT HELICOPTER CAPACITY?

Helicopters are still in the medium power, civilian class. It may be some time before a type will develop which will cruise more than a few hundred miles without refueling or which will carry more of a load than a sedan.

### HOW RAPIDLY WILL HELICOPTERS BE PERFECTED?

As in the case of the airplane, development of the helicopter is a matter of engineering. The present-day airplane is the result of many millions of engineering man-hours over a period of years. The present-day helicopter is the result of several hundred thousand engineering man-hours over a period of years—consequently in per cent, compared with the engineering applied to the airplane of today. Over the years to come, additional millions of engineering man-hours must be expended in order that the helicopter shall make its maximum contribution to progress. How soon that goal is reached depends on the rapidity with which the engineering development can be made.

### KELLETT HELICOPTERS

Kellelt Aircraft Corporation has been a designer and builder of rotary wing aircraft for fifteen years. We have confidence in our ability to provide after-the-war helicopters which will be practical for many commercial uses. We look forward to widening fields of service—along with other aircraft manufacturers—in a better, happier, more air-minded future. Kellelt Aircraft Corporation, Upper Darby (Philadelphia), Pa.

# KELLETT

OLDEST ROTARY WING AIRCRAFT MANUFACTURING COMPANY

AVIATION NEWS • October 22, 1944

AVIATION NEWS • October 22, 1944

# Ready...

Ready indeed is this soldier of the skies equipped with his **SAFE-T-GUITE**. And ready also is our Company to keep you, not only with the needs of those who fly, but with the development of other types of safety equipment. ☆ ☆ ☆ Today we're making **SAFE-T-GUITE** for the gun-troop and combat flyer... but where Victory has

been won, we shall sure our resources to the maintenance of any form of **SAFE-T-PROGRESS** by which our kind experience has equipped us. At this time we make inquiries from those who have a problem of designing or developing safety equipment in the aspect or kind of item. ☆ ☆ ☆ Our engineering staff is available for consultation and we are prepared to plan, advise or manufacture.

NEW electrical receiver for altitude for college, army, navy, high school. 2000 sets for the information include Parachute Data and are issued. 400 sets for the testing.



THE MORE BODIES YOU GET THE MORE SUITS YOU NEED

**SUITLIK PARACHUTE COMPANY**  
Box 10, Trenton 7, New Jersey

U.S. Army Air Force Photo



## New Model 'Copter Has Tandem Rotors

Harwig-Little "heliplane" expected to begin flight tests soon.

Tests of a novel tandem rotor helicopter built by Harwig-Little Co., in San Antonio, are expected to start soon. Prototype of a two-place ship based on designs of David J. Little, vice president of the company, is virtually completed for flight testing.

The helicopter—dubbed a "heliplane" by its builders—differs from previously announced types in that the dual rotors will be stepped, one rotating in a lower plane over the forward section and one in a higher plane at the tail. They are powered by a 99 hp. Franklin engine.

**Automatic Controls**—Mr. Little claims several novel features, among them an automatic lift control, an automatic stabilizer and a fully automatic clutch. The automatic lift control, the designer says, provides adjustment of blades to develop a pre-determined lift "regardless of forward speed and changes in atmospheric conditions." One advantage in the automatic lift control is that, in the event of engine failure, the ideal auto-rotation adjustment is automatically effected, Mr. Little says. The automatic stabilizer, Mr. Little says, will bring the helicopter in hovering position whenever the pilot releases the controls. The controls are simplified for one hand and one foot operation.

**Flight Data**—The helicopter now being completed for testing purposes has a disc area of 830 square feet, disc loading, 1.923 lbs./sq. ft.; power loading, 17.18 lbs./hp.; power-off landing speed, 14 ft./sec.;



**New Type Helicopter Near Test Stage:** Photo shows unusual arrangement of rotor embodied in Harwig-Little Co. "heliplane." A 99 hp. Franklin powers dual rotors arranged in tandem in stepped planes over the fuselage. A high degree of simplified control and automatic operation is claimed for the model, which is expected to be test flown soon.

top speed, 450 ft./sec.; mean effective blade speed, 362 ft./sec.

Harold L. Harwig, president of the company, is owner of Harwig Aircraft and until recently was operator of Bexar County Airport at San Antonio, Tex. The Harwig-Little Co. was organized in July of this year. General offices are at 213 Canyon Avenue, San

Antonio 7. Prior to organization of the company to construct the heliplane, Mr. Little had been principal aeronautical engineer for Don Hallibur Associates of Detroit.

Company is also planning construction of a five-place heliplane of the same general design, powered with a 155 hp. Franklin engine.



**"Heliplane" Builders and Officials at Preview:** This front quarter view shows design features of new helicopter being completed for test flights by Harwig-Little Co., of San Antonio. Left to right: Harold L. Harwig, president of Harwig Aircraft, which is building the 'copter, William F. Callen, engineer, SWPC; Francis A. Murphy, procurement division, SWPC; Russell P. Griest, vice president, San Antonio Manufacturers Association; C. N. Pieser, industrial commissioner, San Antonio Chamber of Commerce; C. L. Pugh, special representative, San Antonio Manufacturers Association; David J. Little, designer of the Little Copter and engineer in charge of development.

## Fisherman's Air Park

An airport for fishermen is proposed by business men at Maroon, Kan., 60 miles from Wichita, who have purchased a lake waterfront tract. The lake already has been stocked for fishing and resorts are built. An administration building and houses would be within walking distance of lakeland cabins. The town of Maroon, population 1,500, has become straddled as the result of nearby army installations and test-flying at Wichita-wide planes, and a score of residents already are learning to fly.

# GOODYEAR AIRCRAFT PRODUCTION REPORT

## CURTISS-WRIGHT P-40 (Warhawk)

3,000 SETS STABILIZERS

CONTRACT RECEIVED: OCTOBER 1940

FIRST PRODUCTION UNIT DELIVERED: MAY 1941

100% PRODUCTION UNIT DELIVERED: AUGUST 1941

CONTRACTS COMPLETED: FEBRUARY 1942

Remark: Speedy delivery of stabilizers for this fast pursuit plane, which bore brunt of early South Pacific and North African operations, proved Goodyear Aircraft Corporation's ability to team successfully with original designer in mass production of important components. Highlight of this production was development of Goodyear Aircraft's own diepling process for rivet holes, preventing cracking and distortion—insuring better workmanship, fewer rejects, faster production.

Goodyear is building components for sixteen different Army-Navy types of aircraft, including complete Corsair Fighters and Corsairs.

## HOW GOODYEAR AIRCRAFT CORPORATION SERVES THE AIRCRAFT INDUSTRY

1. By constructing sub-assemblies to manufacturers' specifications.
2. By designing parts for all types of airplanes.
3. By re-engineering parts for quantity production.
4. By building complete airplanes and ships.
5. By extending the facilities of Goodyear Research to aid the solution of any design or engineering problem.



GOODYEAR AIRCRAFT CORPORATION  
Pioneers in Engineering Aircraft



## ZERO HOUR

While Republic Thunderbolts were busy hammering the Nazis in Italy, scouting out bombers to Berlin, carrying up supplies and bombs in Normandy and clearing paths for the liberation of France and our advance into Germany, they were also moving in on Tokyo. Since August, 1943, Thunderbolts have been steadily altering into the new morning, island-by-island ring of reconnaissance which is closing about the Japanese empire. It has been just a year since an AAF colonel helped introduce the Thunderbolt to the Zero by downing an Jap in a mission over Wake.

Today, Thunderbolt pilots are fighting, dive-bombing and strafing the Japs from New Guinea all the way to Japan and Guam. They are also taking big mean sea lanes busy in India and Burma. And in China

well they are guarding from attack the advance bases from which the past 18-20% "conquest" to the industrial centers of Japan.

Where the Thunderbolt is going to show up next, only time and your daily news paper will tell. But at the zero hour, when the advance and co-ordinated strike ripples the swarms of Tokyo air battle and flame, you can depend on it. Thunderbolt pilots expect to be there.

Republic Aviation Corporation, Farmingdale, Long Island, New York, and Evansville, Indiana.

Republic fights in war point to fight in peace



# REPUBLIC AVIATION

CORPORATION

Specialists in High speed, High altitude Aircraft

## THE AIR WAR

### COMMENTARY

## U. S. Airpower Again Clears Way For Next Big Pacific Operation

Major landing action expected to follow large-scale attacks apparently designed to isolate Philippines.

During the second week of October, Vice-Admiral Marc Mitscher's reorganized carrier task force, comprising several powerful carrier task groups, definitely moved straight into Japan's inner circle, the so-called Empire area. On the first day terrific blows were struck at shipping, fuel air bases and other shore installations in the Ryukyu Ratter Chain (sometimes called the Ratter or Luchu Islands) less than 300 miles south of Kyushu, southwestern island of the Jap "Mainland." Other elements of Admiral Halsey's 3rd Fleet pounded Luzon to the south and fourth days Mitscher lashed out against powerful Formosa (Taiwan) with the promised carrier force of 1,000 planes, and again with some 450 planes on the fifth and following days. The two-pronged attack was a tremendous challenge to the reluctant Japanese fleet, which was further encouraged to come out by an apparent "boeing" from the Philippine waters by Admiral Halsey's fleet.

Coordinated Attacks by "Super-forces" As if this was not enough, on the sixth day the largest armada of B-29's yet dispatched from their bases in the Changtu area, western China, dropped a devastating load of high explosives and incendiaries on Formosa, with a high proportion of bombs landing squarely on the primary target, the great air base of Cawnpore. Two days later another mammoth attack by the Super-forces was carried out. This represents the first employment of B-29's in two successive attacks, and also as part of a coordinated plan of the joint chiefs of staff in which other forces were involved. Within the super-bombers have been used in strategic attacks against high priority industrial targets, mostly steel production.

Including Battlefields—The main

purpose of these air assaults appears to be the isolation of the Philippines from the powerful string of enemy island bases to the north, notably Formosa itself and the Bonin, Okinawa and Amami groups in the Ryukus. This is an application on the grandest scale of the fundamental principle of tactical airpower successfully worked out at New Guinea, North Africa, and in western France.

In all of these campaigns, as well as in "operation strangle" which broke the Chinese stalemate and led to the rapid conquest of Rome and beyond, the main idea is to use airpower to cut the supply lines and communications. Another aspect of this fruitful principle is the leapfrogging and by-passing technique used by General MacArthur and Kenney in New Guinea and by the Admiral Spruance-General Hale Naval Task Force—AAF team in the rapid advance through the Gilbert, Marshall and Caroline Islands. This leaves scores of thousands of enemy troops to wither on the vine, hopelessly cut off from relief, rescue or escape.

Islands of Philippines—An ever mounting series of such attacks may be expected, effectively cutting off reinforcements of fighter planes, troops and supplies until the time is ripe for amphibious landings with heavy air cooperation, on the Philippines. With the powerful Palau Islands in our hands to protect the right flank, MacArthur's forces will be in a favorable position to carry out the great project which has been his burning desire since March, 1943.

Where will he land? No doubt the Japs would like to know, but in the light of the terrific pounding given Mindanao during the past few weeks and the relatively light opposition found at the last it is not impossible that another of his now famous leap-frog operations may

not be in the making. Heavy air assaults against some of the large islands north of Mindanao may provide a clue when the time draws near, or may on the other hand turn out to be a screen for surprise landings elsewhere.

1,000-Plane Carrier Raid—Adjutant of literally dozens of aircraft carriers to our Naval task forces has enabled them to roam with impunity in the western Pacific and the Philippine Sea, well within striking distance of land-based defenses. This amazing blow are being struck at the enemy by carrier-based aircraft, which at the same time are able to protect the various units of the task force from danger. This has been strikingly illustrated again and again in the conquest of the Marianas and the heavy blows against the Bonin Islands, Mindanao, Lema, the Ryukus and Formosa.

A raid of 1,000 planes consisting of hard-bitting fighters and A-26s and torpedoes bombers and Hellcat fighters, leaving the seaplane tenders (PBM-3) for demop, packs a terrific wallop. The fire-power has been increased by addition of 20-mm. cannon in addition to the standard 16-caliber machine guns, plus the devastating high velocity rockets.

The recent attacks on Formosa, heavily fortified southernmost outpost of the Japanese empire and staging area par excellence for the Philippines, are only a start.

NATHANSON

## RCAF Outback

Recalling for the Royal Canadian Air Force has ceased and about 4,200 air crew trainees are being released.

RCAF plans to make operations in the Pacific on a voluntary basis and will discharge its men on a first-in-first-out basis. In the Pacific, Canadian flyers will operate in a strictly advisory capacity. In the European theater they have operated as Canadian squadrons and as a quarter of the Royal Air Force total personnel.

114-153 Air Crews Trained—A total of 114,153 air crew members have graduated from the British Commonwealth Air Training Plan since its start in April, 1941.

The 4,200 or so crew men being released are urged to join the Canadian Army or Navy or stay on in the Army or Navy with full security if they have been in the RCAF less than two years.

## PERSONNEL

**E. G. Edwinko**, who has been assistant to the president of Northwest Airlines, western region, has been placed in charge of all traffic on the SNA system, with headquarters at St. Paul, Minn. Edwinko will direct coordination of all traffic and



Edwinko

Kinnison

order units. He joined Northwest in 1943 after serving for seven years as traffic manager of the Alaskan division of Pan American Airways. Previously he was with the McCloud Lake and the Dallar Steamship Lines. A. G. Kinnison has secured the position of western traffic manager for Northwest. He has served as head of the passenger traffic department. Kinnison will have his headquarters in Seattle, Wash.

**W. R. Thigpen** (below), district traffic manager of United Air Lines at



Portland since 1941, has been promoted district traffic manager for United at New York City. Thigpen was named first citizen of Portland for 1942 by the Junior Chamber of Commerce.

**Lugh Mueller** will be New York assistant control traffic manager. In Portland, he will be succeeded by **John Staudach**, formerly district manager at Golden Thigpen studied at the Boeing School of Aeronautics.

**E. H. Broderick** has been named assistant general sales manager of the Wendell Co. of Cleveland, and **Geoff P. Roberts** has been named sales promotion manager. Henderson joined the company in 1936 and two years later became assistant manager of the aviation sales division. He is a member of the Industry Advisory Committee on aircraft financing, Douglas base, Cleveland, and a BAEI advisory engineer. He has been directing the corporate advertising activities since 1942. Company has moved its West Coast sales office to 1738 Shattuck Ave., Glendale, Ohio.

**Albano**, formerly sales engineer with the Cleveland division, has been transferred to Glendale to assist **E. Van Vorhies**, West Coast sales manager, in direction of the selected and expanded sales branch.

**S. J. Muller**, Pennsylvania Central Airlines safety engineer, has been appointed chief of plant maintenance. He also will be responsible for administration of plant protection and safety programs. Under PCA's new organizational chart, **W. R. Staudach** is operations manager, with **W. B. Markey** as assistant. **C. W. Franklin** continues as epidemic chief pilot with **R. H. Taylor** as assistant chief pilot, eastern region. **McCheslock**, assistant chief pilot, western region, and **G. A. Nowack**, assistant chief pilot, southern region.

**J. Howard Blake** has joined The Glenn L. Martin Co., as director of market research for non-aeronautical divisions of the company. Blake was formerly with W. Ayer and Son, Inc., Philadelphia, engaged in market research work. He will study the commercial development of products of Martin outside the aircraft field. Blake has been with Land Title Bank and Trust Co. and with Administrative and Research Corp., New York.

**Dewey C. Mayne** has resigned as chief of the transportation branch of the Office of Price Administration's Transportation and Public Utilities Division, to become general manager of Aero-Tourists, Inc., Monterey, Mexico. While in Washington he formulated OPA's transportation policies and represented the agency with other government agencies including the Civil Aeronautics Board. He previously had been an executive with carrier companies.

**Fred N. Buever** has been appointed non-president in charge of aviation insurance department at American Casualty Co. and American Aviation and General Insurance Co. Buever has extensive experience in aviation for over 10 years, when the agency was taken over by Aero Insurance Underwriters.



**10 YEARS AT LOCKHEED:** Robert E. Gross (left), president of Lockheed Aircraft Corp., is pictured with L. M. (Mac) Back (center), general works manager, and his brother Charles R. Gross, vice-president and general manager, who were awarded ten-year service pins.

**Allen Grahman**, president of Grahman Diesel Engine Co., Dallas, has been appointed by the Governor of Texas to serve on a post-war aviation committee. Grahman also is national appointment of **M. R. Burge** as director of personnel and employee relations for his company in St. Louis.

**Harold M. Gostell** has been promoted as director of personnel for Deak Aircraft Co., Inc., Torrance, Calif., replacing **Donald E. Hessler**, who resigned to become director of personnel for the Office of War Information's western area.

**James W. Rabinovich** (below), for the past 19 months assistant to Jack Lee,



member of the Civil Aeronautics Board, has resigned to open office in Washington as an aviation consultant and attorney. He will represent Federal Aviation Administration, aircraft manufacturers, airlines, and mechanical associations. Prior to his arrival in Washington, Rabinovich was owner and operator of National Airways, Inc., of Denver, Colo., a flight school, fixed base and charter operation. Rabinovich was one of the organizers of National Aviation Trades Association and was first governor of region four.

**Willard Borish**, who has been chief of the War Production Board's producing branch, has joined Jack and Herbie, Inc., Cleveland. Earlier he was chief of the facilities section of the Aircraft Production Division. Borish served as a staff for the Aircraft Production Board.



Boeing B-29 Superfortress in flight

## Size alone wasn't enough

The Army wanted an airplane that would carry a heavier load than... faster, faster and faster... does any had before.

Size alone wasn't enough. There were already single, expensive models of massive airplanes, but they lacked the required speed and altitude.

There were also high performance airplanes, but these were small, lacked long range and low-velocity ability.

The problem of combining both features in one airplane was put before America's aircraft industry. One company, Boeing, was in an exceptional position to meet the Army's requirements, because of its background of pioneering work in developing such four-engine

airplanes as the B-17 Flying Fortress, the B-29 Bomber, the Stratofortress and the Pan American Clipper.

The Boeing design was accepted. And then, even before the first open aerial model had been completed and tested, the Army contacted the Boeing Superfortress to one of the greatest manufacturing progress ever placed behind any weapon of war.

Seldom has such engineering and production responsibility been given to any organization. It meant that the new plane had to be light, that no basic design changes could be made. It meant that Boeing had to work out the manufacturing plan of the B-29 at the same time it was completing the engineering

designs—and had to furnish full information about both to the engineers which had been selected to help build it.

Success in planning and executing every step of the entire Superfortress program was imperative because of the important military plans built around it. Following the first B-29 operation, the Secretary of War said: "The new long-range bomber has overcome the tremendous barriers of distance to bring the heart of Japan under the guns and bombs of the Army Air Force."

When your study comes, Boeing principles of research, design, engineering, and manufacturing will apply to production for you as well. True, it will be made use of any production product... if it's "built by Boeing" it's bound to be good.

## TO FIGHT THERE AND BACK

In this war pilots often fight for over enemy territory, hundreds of miles from their base. So fighter planes need range as well as strength. \* In such service the Allison engine has proved its mettle. Its economy adds miles to every tankful. Its dependability keeps it in the fight, helps get both plane and pilot back from hazardous encounters.

In smoothness and response lessen pilot fatigue. \* Qualities like these will continue in importance after the war's end.

They will contribute to the comfort and safety of your flight in the day's great air transport to come.

### POWERED BY ALLISON

P-38—Lightning  
P-39—Corsair  
P-40—Warhawk  
A-1H and P-37—Mustang  
P-43—Kingcobra

More than 60,000 Allison engines have been built for the above planes of the U.S. Army Air Forces.

### LIQUID-COOLED AIRCRAFT ENGINES

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BUY MORE WAR BONDS

## PRODUCTION

### Plane Speed Near That of Sound Presents New Design Problems

Revamped equipment and new conception of aerodynamics developing as result of war-stimulated advances, such as jet propulsion and turbine-type power plants.

Tantalizing possibilities of aircraft exceeding the speed of sound, which have been emphasized by the high speed attained by present-day military aircraft, are occupying increasing attention of aeronautical engineers.

Jet propulsion advancements and the progress made in turbine-type power plants point to still greater speeds than those now known and call for new designs, new equipment and new conceptions of aerodynamics. Spurred by military demands, aeronautical scientists already are solving problems that might have taken years without the stimulus of war.

► **Flow Flaps Developed**—An indication of the trend came from Lockheed Aircraft scientists working in conjunction with the AAF who reported recently (AVIATION

News, Oct. 9) that they had developed flow flaps which solved the compressibility problem as far as the P-38 Lightning fighter is concerned. The problem of compressibility is the barrier to airplanes reaching the speed of sound.

Many phases and factors of aerodynamic science are involved in the over-all problem and among the new developments is one reported by Kollsman Instrument Division of Square D Co. which reports an instrument to indicate the relationship of the airplane's true speed to the speed of sound.

► **Mach Number**—This factor, called the Mach Number, is an important one in determining the aerodynamic qualities of new or advanced designs of high-speed aircraft.

This new instrument has sig-

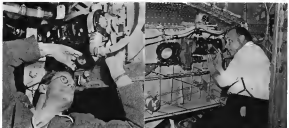
nificant possibilities, since the maximum speed of each airplane will attain before it reaches the speed of sound varies with the design. It should not be overlooked that certain portions of the plane reach this speed well ahead of others.

Importance to the engineer of determining at what speed this takes place is obvious, both as a basis for design changes and because at this speed new and dangerous aerodynamic characteristics are introduced into operation of the aircraft.

► **Varies With Altitude**—Kollsman engineers point out that, as the speed of sound varies with altitude, it was necessary to make involved calculations to determine the Mach Number. Their new Machmeter gives a continuous indication of this factor.

It was explained that in operation it is a combination speeded and altimeter with the two mechanisms interacting to give indication of the relationship of the true air speed of the aircraft to the speed of sound. The range of the instrument is 1 to 1, the Mach Number 1 being the speed of sound.

► **Named for Austrian Scientist**—The Mach Number gets its name from an Austrian scientist of the 18th century, who in his work on projectiles is credited with having first advanced the theory of this relationship of the speed of sound



### B-29'S ELECTRIC BOMB BAY AND WING FLAP ACTUATORS

The 26-pound 11-ounce bomb bay door actuator motor shown on the left opens the bomb bay doors of Boeing's Superfortresses. Powered by two 24-volt motors, the actuators are designed with integral gear reduction to operate at not less than 525 rpm, developing maximum torque of 750 inch pounds. Right: a

21-pound, four-ounce electric actuator motor which operates the speed-arming wing flaps of the B-29 in about 20 seconds. Powered by a 24-volt DC motor, the actuator develops a maximum torque of 1,500 inch pounds at a speed of about 280 rpm. Both are built by Eclipse Power Division of Bendix Aviation.





Photo by Douglas  
Aircraft Co.

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aviation to Stay!*  
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## AVIATION'S OUR POST IN KELITE.

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Yes, less planes will be needed after American aviation has completed its colossal war job. But, there are a lot of people and a lot of dollars in aviation today which would never be

there except for the extreme demands of war. And a lot of us who are deep in war work today are eager to get back to our normal peacetime occupations of helping to supply better air

transport for the world's natural, peaceful needs.

The World, which has seen America's victories in the air, will have big jobs for American aviation to do.

Personally, we at KELITE are in aviation to stay! Our service engineers like to call on men who feel the same way about it, and we're proud that the industry chooses KELITE to supply the largest share of its cleaning and preservative chemicals. So, any time you have a specialized cleaning or preservative job you'd like help on, we'll appreciate your letting us know.

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made by the nearly 400 subcontractors, press and radio representatives. W. A. Newman, Canadian aircraft controller and president of Federal Aircraft, Ltd., was among the speakers.

## Superfortress Cost Reduced to \$600,000

Production line figure compared with earlier of \$3,392,396.90 for first B-29.

Current production models of Boeing's B-29 Superfortresses are costing the government approximately \$600,000 each, compared with the \$3,392,396.90 cost of the first Superfortress, according to Brig. Gen. Kenneth E. Wolfe, Air Technical Service Command chief of engineering and procurement, who played an important role in development of the B-29. General Wolfe was in charge of production and at the time of the initial B-29 cost, was commanding general of the 28th Bomber Command of the 20th Air Force.

**Pre-Contract Outlay.**—It is not always realized that into the cost of the first model of any warplane go years of engineering, experience, tests and changes. Even before the original contract for the first B-29 was let, \$64,156 was spent in obtaining preliminary engineering information, which included wind tunnel models, long and costly tests and mock-ups.

General Wolfe said the original contract was let for \$1,004,046, later reduced to \$1,874,000 when the government assumed certain flight risks. This sum did not include the government-furnished equipment, which cost approximately \$480,000. The inevitable changes necessary before production can start added to the cost. On the B-29, which is a milestone in aircraft history, for example, to alter the tail, \$73,000 for enlarging the bomb bay, and \$13,600 for new propeller tests. Incidental changes to perfect the model ran the total up another \$36,897.

**Static Tests \$661,828.**—Before the first Superfortress could be built on the production line, it was subjected to a great series of static tests in the aircraft laboratory of the ATSC at a cost of \$651,320. A complete airframe was put on the rack and tested for stress and strain until it was destroyed.

While changes as the result of tests are expensive, General Wolfe



## NEW TIRE REMOVER:

Sgt. Walter M. Babin, foreman in a welding shop of the Army Air Forces Service Command in India, developed this hydraulic tire remover which is now being produced in the field for AAF units. It weighs 60 lbs. and has been recommended for the Legion of Merit for this and other inventions.

emphasized that they pay for themselves many times over, since they assure volume production of highest quality.

## No. American Builds 30,000th Warplane

The 30,000th military plane to be built by North American Aviation, Inc., in five years has been turned over to the Army Air Forces. The plane bearing that number was a B-25 Mitchell medium bomber, produced at the Kansas City plant.

North American Aviation has built up its production record on five types of planes, including a heavy volume of trainers, B-25's, P-51 Mustang fighters and Consolidated Vultee B-24 Liberator heavies. It also has produced the equivalent of 6,535 planes in spares and components in the same period, from September 1, 1939.

**Labor Problem.**—Some 13,000 units have been produced at the Dallas, Tex., plant, despite a labor turnover rate that ran from 20 percent in 1941 to 65 percent this year, with recent cutbacks affecting virtually 80 percent of personnel.

## Mobile Generators Used to Start Planes

Device developed by three mechanics attached to ATSC unit at Wichita.

A speedy self-propelled electric generator for use on all types of warplanes requiring external current to start engines has been organized by three civilian aircraft mechanics attached to the Midwestern Procurement District, Air Technical Service Command, at Wichita, Kan.

In order to save time and effort, a standard portable aircraft electric generator (24 volts from a 4-cycle engine) power plant has been mounted on the chassis of a 3-wheel gasoline scooter to provide the handy and practical mobile unit.

**Tests Electrical Equipment.**—The equipment also is used for testing radio and other electrical equipment.

The idea was originated and the plant built by Millard B. Terry, foreman of Army mechanics at the AAF Wichita installation, Merle S. Berk, assistant foreman, and Joe Mack, mechanic.

**Time Saver.**—The unit is particularly useful in cold or inclement weather and saves considerable time and effort, especially when a number of planes have to be serviced. The scooter lost some of its mobility and speed through the added weight and can service planes more rapidly than any previous style of mobile generator equipment. One man can operate the unit.

## New Tumbler Line

Post-war plans of J. A. Tumbler Laboratories, Redding, manufacturers of automotive chemical accessories since 1925, include a line of aviation service and maintenance chemical products to be distributed through aviation accessories and equipment jobbers and automotive distributors branching out in this field.

In connection with this program, W. F. Hagan has been named general sales manager. He formerly was with American Colloid Industries, E. F. Brown & Co., where he was sales manager, automotive department and set up distribution of its chemical products devoted to maintenance and repair services, aviation, automotive and diesel fuel fields.

## Survey Shows Aircraft Dividends To Equal or Exceed '43 Payments

Dividend payment time has arrived for most of the aircraft builders. Soon, directors will meet and set on year-end declarations. The uncertainty which has always been part of the industry, has precluded any stable, consistent periodic dividend payments during the year. Instead, the general rule has been to make major payments to stockholders at the year draws to a close.

**► Douglas Overdue** — Douglas is somewhat overdue in acting. However, as this appears, it is likely the directors will have declared the usual \$5.00 dividend. Some speculation has been present as to a larger payment this year but the company's conservative policy

City	2000		2001		2002		2003		2004		2005	
	Pop.	Pop. Density	Pop.	Pop. Density	Pop.	Pop. Density	Pop.	Pop. Density	Pop.	Pop. Density	Pop.	Pop. Density
Albuquerque, N.M.	1,150,000	1,150	1,170,000	1,170	1,190,000	1,190	1,210,000	1,210	1,230,000	1,230	1,250,000	1,250
Anchorage, Alaska	280,000	280	285,000	285	290,000	290	295,000	295	300,000	300	305,000	305
Atlanta, Ga.	420,000	420	430,000	430	440,000	440	450,000	450	460,000	460	470,000	470
Baltimore, Md.	750,000	750	760,000	760	770,000	770	780,000	780	790,000	790	800,000	800
Boston, Mass.	600,000	600	610,000	610	620,000	620	630,000	630	640,000	640	650,000	650
Chicago, Ill.	2,800,000	2,800	2,850,000	2,850	2,900,000	2,900	2,950,000	2,950	3,000,000	3,000	3,050,000	3,050
Denver, Colo.	700,000	700	710,000	710	720,000	720	730,000	730	740,000	740	750,000	750
Detroit, Mich.	950,000	950	960,000	960	970,000	970	980,000	980	990,000	990	1,000,000	1,000
Houston, Texas	2,100,000	2,100	2,150,000	2,150	2,200,000	2,200	2,250,000	2,250	2,300,000	2,300	2,350,000	2,350
Los Angeles, Calif.	3,800,000	3,800	3,850,000	3,850	3,900,000	3,900	3,950,000	3,950	4,000,000	4,000	4,050,000	4,050
Minneapolis, Minn.	350,000	350	355,000	355	360,000	360	365,000	365	370,000	370	375,000	375
New York, N.Y.	19,000,000	19,000	19,500,000	19,500	20,000,000	20,000	20,500,000	20,500	21,000,000	21,000	21,500,000	21,500
Phoenix, Ariz.	1,200,000	1,200	1,250,000	1,250	1,300,000	1,300	1,350,000	1,350	1,400,000	1,400	1,450,000	1,450
Portland, Ore.	550,000	550	560,000	560	570,000	570	580,000	580	590,000	590	600,000	600
San Francisco, Calif.	800,000	800	810,000	810	820,000	820	830,000	830	840,000	840	850,000	850
Seattle, Wash.	600,000	600	610,000	610	620,000	620	630,000	630	640,000	640	650,000	650
Wash. D.C.	600,000	600	610,000	610	620,000	620	630,000	630	640,000	640	650,000	650

With many of the aircraft build-  
ers yet to act, it nevertheless is a  
safe premise that when aggregate  
dividend disbursements are totaled  
for 1954, it will be found that

Northwest Airlines, Inc., reports for the year ended June 30, 1994, net profit of \$217,359 after taxes and reserves, including \$100,000 reserve for war and post-war contingencies. The statement shows profits 73 percent over previous year, or \$1.43 each on 398,384 common. Company's surplus was \$1,511,910. Operating revenues increased 44 percent over previous fiscal year as a result of "gross increases in passenger business and fees from Army contracts."

Ben Epps Field...Athens, Ga., Airport

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War Surplus Planes**  
We have a large stock of  
parts and free facilities  
for repair and  
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## CAB Speeds Hearings on Important North Atlantic Route Case

Board moves quickly to be prepared to assume leading role in world air commerce as changing military situation promises early reopening of European trade channels.

By DANIEL S. WENTZ II

Moving rapidly to insure U. S. readiness to assume a position of leadership in world air commerce, the Civil Aeronautics Board last week opened what is probably its most important case hearing to date—the North Atlantic case. Changes in the military situation in Europe probably have heightened the sense of urgency which originally prompted the government to speedy action, and the case will be acted upon with all dispatch.

Seven airline applicants are contenders for the juicy North Atlantic prize. The routes they are asking vary widely, both as to terminals and as to intermediate stops. Most qualified observers, fact, however, that these applicants whose proposed routes must nearly conform to the Board's tentative pattern on international routes stand the best chance of certification in the case.

The proceeding thus far has little of the atmosphere of the conventional route hearing in which airline executives usually predominate.

Beneficial currents seem to be expanding internationally are appearing before the Board in a new speed. Experience as contract operators for the Air Transport Command has made many of these international air carriers, for example, except a CAB certificate American Airlines, for example, is now flying a million miles monthly in an international service. Its president, A. K. Kopp, has stated that his line could start trans-Atlantic commercial service on 24 hour routes if planes were provided. The company now is flying seven daily round trips over the route with Army-owned planes.

American Airlines was the first carrier to present its case. The C-54's it now flies for the ATC will be replaced with the DC-6

in a service which will bring New York within 11 hours and 35 minutes of London at a proposed cost of \$235.

Other plans, as revealed by company witnesses, envisioned 25-44 seated passengers within 10 years, using DC-4 equipment. With DC-6's, American estimates that it will carry 27,000 passengers of a total of 100,000 one-way North Atlantic air travelers within the ten year period. Both figures are based on an operating load factor of 83.5 percent. The line hopes to have DC-6's in operation early next year, with DC-8's following by nine months or a year later. American's position as a leader for international expansion is considered quite strong. If the routes it is asking (from New York, Bos-

ton, Chicago and Detroit to Paris and London) are granted, it will be in a position to use its vast domestic route network as a feeder system for international passengers. Should the acquisition of a controlling share in American Export Airlines be approved by the CAB, American will possess the foundation for an international route system which can readily be integrated into its U. S. operations.

As brought out in the course of question, American's position to operate internationally through Export, and its route expansion will be done in the latter's name should the acquisition be approved.

Another strong contender in the North Atlantic is Pan American Airways, already possessing certificates over several of the routes in question, and seeking further expansion into an around-the-world carrier. Pan Am's position in this case presents a dual aspect. It is anxious to protect its present choice position, and it also hopes to extend into more traffic producing areas.

The hearing opened before Examiners Thomas L. Wrenn and Ferdinand Moraw with appearances in behalf of the New York and Boston Port Authorities, the City of Philadelphia, and the Baltimore Aviation Commission. Many observers felt that these seaboard

cities were making an attempt to preserve their commercial position which was focused to eventual failure because of the airplane's ability to ignore obstacles.

## Stress Accessibility In Port Location

Civic bodies warned of important time factor and need for super-highways to link cities with outlying airfields.

Recurrent warnings to civic bodies planning new airport facilities after the war are placing additional emphasis on accessibility as well as location.

While recognizing desirability of having airports near business centers, Civil Aeronautics Administration and others point out that the latter consideration is required for present and projected aircraft make almost mandatory far-out locations. Fields so spotted, however, should include super-highways, as part of the construction job.

Port Survey Made—In citing location as probably the most important consideration in airport planning, Port, Roads & Docks, a recent survey, says that a recent airport survey also shows hourly variation in traffic volume as a factor to be noted. At a typical airport, the survey shows, daily traffic peaks at 6 P. M. This is particularly true at eastern terminals which, it is stated, "gives a later hourly peak at Chicago, because of western flights, and so on through western intermediate stops."

Recommending that prime study be given to location, the survey recalls that time lost in getting to and from an airport wastes air traffic's chief advantage, speed. "The scheduled flight from Minneapolis to Chicago in 2 hours and 30 minutes. But it takes 20 minutes to get to the airport in Minneapolis and 20 minutes from the Chicago Airport to the Loop. The total travel time, in this case, adds up to 44 per cent of the air flight time."

Runway Length—Length of runways suggested in the survey are 1,500 to 2,700 feet for communities up to 3,000 population; 3,048 to 3,900 feet for cities of 3,645 to 10,000; and 4,200 to 4,950 feet for larger cities which will be served by DC-6's.

"The primary runway," the survey reports, "is constructed to take care of all wind conditions from



CAL'S FINAL ATC FLIGHT:

Last flight under Air Transport Command's domestic contracts with the airlines was made last week by Continental Air Lines. Other domestic contracts have been canceled, but overseas contracts continue. Pictures show O. D. Houser (right), co-pilot, in charge of operations, handing final ATC cargo that consisted to pilot William H. Clyde. Loaders were Louis W. L. Collett of the ATC (left) and Jack Weller, chief pilot for Continental.

split air up to the maximum allowable cross winds." Therefore secondary runways can be sited down and it is seldom necessary, "despite the attractive symmetry," to construct more than two runways oriented to the angles of the wind.

## American Gives Data On ATC Operations

In a report coinciding with the early stages of the CAB North Atlantic route hearing, American Airlines last week revealed details of its wartime operations for Air Transport Command. Flights to 32 countries on six continents built up a true-nosed mileage of 11,334,339 from August, 1943, to July of this year, it disclosed.

The line revealed its first military load 40 minutes from the Chicago Airport to the Loop. The total travel time, in this case, adds up to 44 per cent of the air flight time.

Runway Length—Length of runways suggested in the survey are 1,500 to 2,700 feet for communities up to 3,000 population; 3,048 to 3,900 feet for cities of 3,645 to 10,000; and 4,200 to 4,950 feet for larger cities which will be served by DC-6's.

"The primary runway," the survey reports, "is constructed to take care of all wind conditions from

results, carrying 4,530,400 pounds of supplies.

Other wartime accomplishments claimed by American are: transport for the Army of 375 pilots, 968 mechanics and 119 flightboats, flight training in two-engine aircraft for 1,389 Navy pilots, modification of 99 B-24 Liberator bombers, engineering the installation of pistons on the Douglas C-47, conducting tests over the North Atlantic of experimental propeller de-icing equipment.

## New Flight Control Methods Developed

400 percent gain in effectiveness claimed for improved system described to Institute of Aeronautical Sciences by CAA specialists.

Improved methods of air traffic control to accomplish a four-fold increase in effectiveness almost immediately were outlined in the Institute of Aeronautical Sciences last week by Gen. A. Gilbert, chief of CAA's air traffic control division. However, the new measures are only a stop-gap, he explained, until revolutionary equipment now being developed comes into use.

Two devices now being perfected and termed "beacons" are a "collision warning indicator" in the aircraft, and a "sensing screen" in the airport traffic control tower. The first "should allow a pilot at all times of the relative separation between his aircraft and other aircraft within a predetermined radius." The tower screen would show the position of all aircraft within a radius of 25 miles and make identification possible.

Other Instruments—Two other instruments for installation within an aircraft are desirable, Mr. Gilbert stated. One would automatically report position to a ground receiver, making position broadcasts by pilots unnecessary. The other would be a "visualizer" which would give visual reproduction in the cockpit of orders from the control tower.

Four new techniques of traffic control revealed by Mr. Gilbert are "approach control" whereby airways traffic control officers delegate authority to airport towers, raising the maximum number of instrument weather landings from four to 20 per hour, an airborne flight data posting system, very high frequency (VHF) radio communication facilities, and VHF navigation facilities.



DC-6 POWER PLANT:

Petite sheet R-2634-C Douglas Wasp engine and Hydromatic propeller, four of which will power each of the Douglas DC-6's already on order for post-war use by some of the airlines. Standing in front of the production engine shown is an Earl Hartford, Conn., test cell where air flow simulators flying conditions, are engineering managers Wright A. Parlane and Eric Martin of Pratt & Whitney Aircraft and Hamilton Standard Propellers, manufacturing divisions of United Aircraft Corp.



#### IDLEWILD MOCKUP:

This new model of New York's new \$50,000,000 Idlewild airport shows the \$7,500,000 administration building, with three hangar groups nearby to house and repair airline planes. Lower left is a tank farm for gas and oil, and lower right, a seaplane base. White lines indicate "temporary" runways and taxi strips.

### Washington Airport Revenues up Sharply

Return of equipment and increased schedules listed as important factors in increase.

Revenue at Washington National Airport was considerably higher during the fiscal year 1944 than 1943, and airport officials expect it to reach an even higher total during the current fiscal year.

A factor in the increase has been the return of equipment and consequent increase in airline schedules. This has been particularly noticeable in the revenue from "miles sold," as air terminal service, which amounted to \$54,018 compared with \$6,070 the year before and now is running more than \$2,000 a month toward what may be a doubling of last year's figure.

**Revenue Up 16 Percent**—Total revenue for fiscal 1944 was \$518,470. This compared with \$443,901 in fiscal 1943, \$463,253 in 1942, and \$48,628 in previous years—total revenue of \$1,279,654 since the airport was opened. One of 1944 over 1943 was \$73,569, or over 16 percent.

Air terminal service in the past fiscal year brought it to \$65,384,

compared with \$61,888 in 1943. These included restaurant, news stand, leather shop, etc.

The airport's statistics in 1944 brought in \$14,289 against \$11,000 in 1943, and that figure is expected to take a big jump upward when gasoline rationing is lifted.

**Route Up Sharply**—Other increases in 1944 over 1943, shown by the revenue statement, result for terminal building, hangars and temporary buildings, \$124,114 against \$99,510; landing fees, \$30,678 against \$24,000; ramp service, \$17,042 against \$11,003; sale of utilities, \$75,406 against \$61,900.

Revenue from a taxable corporation was \$15,106 compared with \$11,805, while that from a bus company dropped from \$619 to \$750. Revenue from Gulf Oil's gasoline concession remained at \$150,000 for the 12 months.

### Roth to Testify

Almon E. Roth, chairman of the American Federation of Shoppers, is to testify before the Werley subcommittee on overseas trade of the House Post-War Economic Policy Committee when it resumes hearings Oct. 26.

Roth, who is expected to stress need for steamship company operation of air-sea service after the

war, is one of a group of witnesses Chairman Eugene Werley has announced will appear in the subcommittee's studies of overseas trade.

### Hughes Tool Control Of TWA Approved

Civil Aeronautics Board last week approved control of TWA by Hughes Tool Co., owner of 48.6 percent of TWA's outstanding stock. The stock interest represents an investment of \$5,500,000 by Hughes Tool in TWA.

**Conditional**—The Board gave its approval subject to the following conditions imposed upon TWA:

That transactions between TWA and Hughes Tool or its affiliate are limited to loans not exceeding \$200 each, and not aggregating over \$10,000 annually.

That TWA shall furnish an annual report on all such transactions.

The Board specifically stated that its decision will not restrict or affect existing agreements between TWA and Hughes Tool relating to the acquisition of Lockheed Constellation by the latter.



#### WORK ON FINAL PLANS:

Workshop on final plans for Idlewild airport are Chief Schofield, projects engineer in planning, who organized application of Langford resort to Idlewild, and Glenn Meritt, director of airport and airways design, both of American Airlines.

## UAL Contracts with Douglas For Delivery of 15 More DC-6's

Order brings number of four-engine aircraft purchased by airlines for post-war use to more than 150.

United Air Lines, with the signing of a contract for 15 additional Douglas DC-6's for post-war delivery, last week brought to more than 150 the number of four-engine units the airline has ordered from Douglas Aircraft Co.

Amount of anticipated post-war orders, under contract with Douglas and Curtiss-Wright, now stands close to \$10,000,000. This includes 10 DC-4's, 50 DC-4's, 30 DC-4's, an unspecified number of DC-4's and Curtiss-Wright CW-30 Commandos for which Eastern Air Lines has ordered \$2,500,000 and National Airlines' \$3,000,000 order for 16 CW-30's. Eastern had not signed the Douglas contract late last week but was negotiating for eight DC-4's for regular delivery and eight more as a first refueling basis, depending on the route outlook.

**Previous Orders**—United announced last month it would contract for 15 DC-4's in addition to the 10 DC-4's and 30 DC-4's it then ordered. Other contracts at that time came from American Airlines, for 25 DC-4's and 30 DC-4's, and Panagra, for three DC-4's. Subsequently PCA ordered 15 DC-4's and Pan American Airways announced it had made a deposit toward purchase of 20 DC-4's.

Price of the 340-mpg 44-passenger DC-4 has been announced at approximately \$400,000, and that of the 300-mpg 50-passenger DC-6 at between \$500,000 and \$550,000. United says, however,

that its contract for the 50 four-engine planes will amount to approximately \$23,000,000. If this is true on the other contracts, the total may run well above \$50,000,000. Most of the contracts are understood to include purchase of many spare parts.

**Pan American**—PAA has estimated the cost of the DC-7 at \$1,415,000. Soon after announcing it had made initial payment on 25 of these, Pan American told Civil Aeronautics Board it expected to spend \$5,975,000 on 50 new planes for use in Latin American service, including DC-7's, a modified Lockheed Constellation, and a "Type 12" variation of the Douglas two-engine 20-seat Skybus.

More detailed announcements are yet to come from the manufacturers, Douglas, for instance, in announcing the first batch of \$3,000,000 worth of contracts, said there was thereby a \$160,000,000 backlog on the books. Much of this reportedly is from foreign purchases.

Douglas also discloses that Australian National Airways has selected the C-47, a version of the DC-3, for its civil air freight route between Melbourne and Brisbane via Sydney. Additional reports are that Australian National is about to contract for four DC-4's and four DC-4's.

**Delivery Time**—When the four-engine planes will be available is problematical, but United hopes it may have some of its DC-4's next

summer. With them it expects to reduce coast-to-coast elapsed time to less than 11 hours with a stop on route. With the DC-6, to be delivered after the DC-4, the time is to be cut to 8½ hours, says W. A. Patterson, United's president. DC-6's will supplement their use. The first also plan to use the transoceanic planes between California and Honolulu if CAB approves its application for that route, and anticipates the DC-6 would cut flight time from 27½ to 19½ hours.

### Alaska Airlines Asks Routes to U. S.

Fliers for entrance at Seattle and trans-Canadian link to Chicago.

Alaska Airlines, Inc., asks Civil Aeronautics Board for new route authorizations to extend its system beyond the territory and into the United States at two points, giving a direct link between Alaska and Seattle and a trans-Canadian connection with Chicago. Alaska Airlines is the second of the CAB-certified native Alaskan carriers to ask such expansion.

The Seattle route would provide scheduled mail, passenger and express service from Anchorage via Juneau and Gustavus. Cordova and Yakutat are listed as alternate intermediate points.

Fairbanks and Anchorage are co-terminals of another route which would reach Chicago via Wrangell, Fairbanks, Lake, Fort Nelson, Fort St. John, Edmonton and Regina, Canada, Fargo, N. D.; and Minneapolis.

**Alaska-Reward**—Northern Airlines applied for a certificate for scheduled mail, passenger and express service between Boston, Mass., and Hamilton, Reward Northern has announced plans to operate the route with 4-engine equipment, at a tentative fare of \$40 for the 3 hour and 15 minute flight.

### Conroy Leaves Industry

Vincent P. Conroy, former traffic vice-president of Transcontinental & Western Air, has joined Delta Manufacturing Co. of Milwaukee as assistant to the president.

Conroy was in the air transport industry 17 years, and with TWA from 1935 until he resigned last summer. His duties there have been taken over by E. O. Cooke, TWA general manager.

Delta is a manufacturer of light power tools for industrial work.

#### MODEL AIDS RUNWAY PLANS:

This three-dimensional model was used by airplane company engineers in working out diagonal runway arrangements of Idlewild airport in New York.



1

## Parks Incorporates Air Transport Unit

Firm with \$3,000,000 authorized capital will ask CAB permission to substitute for Air College as applicant for 35 routes.

Effect of Oliver L. Parks, East St. Louis, Ill., and his associates to establish their interest in the local service air transport field took concrete form last week with incorporation of Parks Air Transport.

This organization will seek Civil Aeronautics Board permission to be substituted for Parks Air College as applicant for 35 routes to include 14,760 miles in 18 coastal states incorporated under Nevada laws, it has \$3,000,000 authorized capital stock, of which \$2,000,000 will be paid in capital made up of \$80,000 from each of the five incorporation Parks heads, \$464,000 in common stock paid in by board members and personnel of affiliated companies, and \$1,800,000 from sale stock.

**Preliminary Work**—The \$2,000,000 will be backed as working capital in anticipation of CAB authority to fly the routes or any part of them. Officials of the corporation



**Panagra Parks Line** Philip C. Wagner, vice-president and general manager of the newly incorporated Parks Air Transport, Inc., directed research on which Parks has based its local service emphasis.

hope preliminary work on operational procedures may start early next year.

For the last two years they have been working up material to support the application. Final hearings are being put on a book substantiating findings of a research group directed by Philip C. Wagner, of St. Louis, Mo., vice president and general manager of Parks Air Transport. A 400-page book along similar lines already has been published.

**Research**—Wagner points out that much time has been invested in experimental flights, research and engineering study. The new book will be more than 500 pages. The corporation plans to distribute employment evenly between returning servicemen and present employees, and has immediately available operating personnel consisting of pilots, mechanics, meteorologists, sales staff and others.

Officers are Oliver L. Parks, president; Wagner, vice president and general manager; John W. Bryan of Skidmore, Mo., secretary-treasurer; Directors: Edward C. McKernan, St. Louis; Fred C. Parks, Belleville, Ill.; Joseph L. Mathews, Skidmore; D. Edgar Fletcher, Alton, Mo.; Oliver Parks and Wagner. Leonard Lawrence, Oklahoma City lawyer and member of the board, handled legal details of the incorporation.

Parks Air College at East St. Louis, of which Oliver Parks is president, is in the 10th year of aeronautical engineering training. Other contributing organizations,

originally formed to conduct flight-training programs for the AAF, are Alabama Institute of Aeronautics at Tusculum, Mississippi Institute of Aeronautics at Jackson, Missouri Institute of Aeronautics at Skidmore, Mo., and Cape Institute of Aeronautics, Cape Girardeau, Mo.

## Grace Takes Panagra Case to President

Ask CAB to require Chief Executive to direct company to apply for N. Y.-Baltic route in move to break deadlock by directors.

As a closing maneuver in Civil Aeronautics Board's Latin American proceedings, W. R. Grace & Co., co-owner with Pan American Airways of Pan American-Grace Airways (Panagra), petitioned the Board to find that a New York-Baltic route (for which Panagra was not explicitly requested in the public interest and that Panagra should operate the route, and requested the Board to ask the President, who is asked to "re-gain or regain" Panagra to file for the route the W. R. Grace half of its management thinks it should have.

**Another step** in W. R. Grace & Co.'s effort to break the deadlock in the Panagra battle at directors, the move follows closely the suit brought against CAB in the U. S. Circuit Court of Appeals by W. R. Grace & Co., seeking judicial review of the Board's Panagra Terminal Decision. Inasmuch as the outcome of the suit may be undetermined for many months, W. R. Grace and Co. lawyers have chosen this new line of attack.

**President Arbitrary**—Behind the suit is a theory that the CAB is the planning body for the U. S. international air route structure. Under the Civil Aeronautics Act, the President is the ultimate arbiter of international route structure.

to U. S. carriers, with the Board acting as an adviser. It is W. R. Grace & Co.'s contention that an optimum route pattern for Latin America cannot be arrived at without thorough consideration of the applications filed by various carriers, but that the Board must take direct action at this end.

They point out that as New York-Baltic application has been filed by any carrier, but that the line serves the shortest link between New York and the important West Coast of South America, an area which would be discrimi-

nated against if such service is not authorized.

**Statewide**—Grace holds that, because of the corporate structure of Panagra, four Pan American divisions have been able to hold Panagra in the position of a stepchild in Pan American, thus precluding Panagra from doing for the N. Y.-Baltic route because a quorum of directors cannot be obtained. Pan American, Grace claims, has specifically prevented such an extension because granting Panagra access to the U. S. would damage Pan American's role as contracting carrier between the U. S. and the West Coast of South America.

The problem presented by this petition falls immediately upon the Board's members in the Latin American case on which hearing ended last week. Ultimately, however, it must come before the Board.

The latter has found that without application by a carrier it cannot issue a certificate which would radically change the character of that carrier's route structure. In that context, however, the Board is specifically requested to pass the question along to the President, who is asked to "re-gain or regain" Panagra to file for the route the W. R. Grace half of its management thinks it should have.

**Principles Criticized**—The Board reportedly has criticized the "unbalanced" feature in the Panagra management. From that it cannot fail to assume that the Board would welcome some equitable means of breaking the deadlock. The outcome is expected ultimately to reach the President, who must approve the Board's decision on the Latin American case before it is made public.

W. R. Grace & Co. therefore may have accomplished something of a tactical victory by a move to bring the Panagra situation to the attention of the Chief Executive.

## CAB ACTION

**GO**—Antitrust Board denied suit of Civil Aeronautics Board to require CAB's late deadline of Feb. February 28, 1946, for submission of applications for the U. S. and route to Alaska, Feb. 1, 1946, but has taken no action on the suit.

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## SHORTLINES

**Lead factor on National Airlines**—New York City, N. Y., and Jacksonville, Fla., are the main factors in the National Airlines case. National Airlines, which has been 80% owned by the National Airlines Corp. since its formation in 1934, has been 80% owned by the National Airlines Corp. since its formation in 1934. National Airlines, which has been 80% owned by the National Airlines Corp. since its formation in 1934, has been 80% owned by the National Airlines Corp. since its formation in 1934.

**Improvements slated for Chicago's municipal airport** are expected to give capacity of 60 landings and 60 takeoffs an hour by 1950. The airport is now being expanded by 100,000 sq. ft. in the early 1940s. Construction on WPP's existing materials available, improvements are to cost \$1,500,000.

**The airlines**, if approved, will be valid for 10 years. The airlines, if approved, will be valid for 10 years. The airlines, if approved, will be valid for 10 years. The airlines, if approved, will be valid for 10 years. The airlines, if approved, will be valid for 10 years.

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with eight airlines leading \$1,250,000 without interest for construction of a new passenger terminal, and the city provided \$200,000 for necessary improvements. Chicago will own the terminal, the airlines collecting their costs on a withheld hangar and landing fees.

**A fleet of five DC-3's**, now being assembled, it is to be placed in service by Pan American Airways between Seattle, Wash., and the cities it serves in Alaska, with the expectation that three times as many air travelers can be carried as at present.

**Opening of service to Huntsville, Ala.**, is planned by Pennsylvania-Central Airlines. An additional cost month, now that airport facilities are available, stop at Huntsville was anticipated in 1944.

**Northwest Airlines**, in its second major expansion in the Twin Cities in the last four months, has purchased for \$97,000 a building to house shops and maintenance personnel.

**Service on Northeast Airlines**—Between Montreal, Quebec, and New York, N. Y., was scheduled for 1, 1945, because of the war, it is to be made Oct. 23 with two round trips daily.

**One chartered bomber** flying back between Pearl Harbor and San Francisco has been completed by the Army, representing more than 200,000 miles with more than a million pounds of cargo.

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## Unshackle Personal Flying

SOME say physical examinations for private flyers should be abolished. Meanwhile, opposition continues in some non-flying quarters—mainly those specially-designated medical examiners who have the exclusive right to pass on potential and present pilots—against the first progressive step toward simplifying present medical regulations. This would eliminate the annual examination.

The Safety Bureau of the Civil Aeronautics Board several months ago began circulating a proposal relating to private and student pilots that either (1) physical examinations be given only every two years by any qualified physician of the pilot's choice or, that (2) only one physical examination by a medical examiner duly authorized by the Administrator be given at the time the certificate is issued and thereafter it would be the pilot's own responsibility not to fly if his physical condition became such that he could not pass the original examination. "In either case, it may be that the examination can be more general in nature and consist of a determination that the applicant has adequate eyesight and no ailments which might cause him to become incapacitated suddenly or unexpectedly," the proposal reads.

This proposal was brought about by a virtual rebellion of private flyers. They were justifiably exasperated at an alarming trend by examiners to reject, rather than pass, applicants on certificate holders on the basis of physical condition. What was originally meant as only the first step in a screening process that continued through the flight instructor and the CAA inspector became the major bottleneck in the growth of personal aviation. The potential private pilot was looked upon as someone needing the stamina and constitution of Superman because the public must be protected from thousands of falling planes. But it was the public who revolted, because more and more it sought to learn how to fly and was rebuffed to the point of doing something about it. It was thoroughly fed up with unnecessarily strict examinations and notices from Washington which did not even tell the disappointed candidates why they did not pass their physical.

What are the basis for continuing the present regulations? Does the record show that the pilot's physical condition has been a factor in past accidents? Actually, no satisfactory answer to the proposal has been heard. The truth is that we have been accepting too many statements which are not facts. Objections to liberalizing physicals have been, and still are, based on accidents which might happen. Assumptions have been made for

which there is no proof. Experience and records have been ignored. For example:

The director of CAA's Safety Bureau, Jesse Landford, finds that in analyzing over 68,000 civil aviation accidents in the last 16 years, no more than two or three could be associated with any physical condition of the pilot which could have been ascertained through the periodic physical examination given him prior to the accident.

In order to prevent the cry that this record of 16 years is not sufficient proof because it is based on the Safety Bureau's own records, let it be supplemented by an independent study by an impartial, respected research group. If the results substantiate the position of the Safety Bureau it should put into effect immediately a liberalized regulation similar to its proposal.

Private flying has been hamstringed beyond endurance and the revision of physical standards is the first step in the long, hard process of unshackling private flying.

## Good Public Relations

IT WAS twice a disgruntled RAF sergeant in India to remind some Americans that despite our tendency to avoid publicity material disseminated about U. S. aircraft is the highest in the world.

The sergeant complained to the editors that his *Aeroplane* was filled with news and photographs of Fortresses, Liberators, Mustangs, Thunderbolts, Mustangs, Navies and Mustangs and only casual references to Spitfire or Bomber Command. "So far as I can see," wrote the sergeant, "the only thing that remains to be done now is to change the name of the *Aeroplane* from one shifting to 40 cents."

To which the editors replied: "We entirely agree with our critic, but the fault is not ours. As we have pointed out before, the *Aeroplane* is shrouded under with beautiful photographs and all the information it requires about U. S. aircraft, but we cannot get either the photographs or information we require about British aircraft. . . ."

The British aircraft industry will not get the square deal it deserves and has earned, and which will enable it to compete in fair competition with foreign markets, until it is released from the shackles of bureaucratic government control. The same argument applies to the Royal Air Force. . . ."

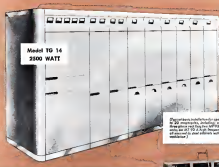
The quality of information released by U. S. aircraft companies and the airlines to publications all over the world will contribute to what we believe will be unprecedented demand for our post-war planes. The public relations staffs of the industry have done an excellent job

ROBERT H. WOOD

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